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LABORATORY WASTE INSPECTION FOR BUILDING 13 CNC CHARLESTON SC
10/1/2013
RESOLUTION CONSULTANTS

1 October 2013

David Criswell, P.E.
Deputy Base Closure Manager
Navy BRAC Program Management Office Southeast
4130 Faber Place Drive, Suite 202
North Charleston, South Carolina 29405

**RE: Laboratory Waste Inspection
Building 13 — Former Charleston Naval Complex
North Charleston, South Carolina**

Dear Mr. Criswell:

Resolution Consultants, with the assistance of our hazardous materials subcontractor, EnviroSmart, visually inspected a historical laboratory within Charleston Naval Complex's Building 13 for laboratory waste. Work was accomplished under the Comprehensive, Long-term Environmental Action Navy contract number N62470-11-D-8013, Delivery Order JM16, and in general accordance with the Navy Statement of Work, dated 14 March 2012, and Resolution **Consultant's Plan of Action/Cost Estimate, dated** 15 May 2012. The purpose of the inspection was to identify and inventory laboratory chemicals and/or waste in the building. Furthermore, the inspection allowed for a determination as to if decontamination of laboratory equipment is necessary. A summary of field activities and associated findings, along with recommendations and estimated costs for subsequent equipment decontamination and laboratory waste removal efforts, are included herein.

BACKGROUND:

From 1906 to 2000, the approximate 13,000-square foot, three-story, brick Building 13, at the intersection of A Avenue South and Pipefitter Street in North Charleston, South Carolina, served as a quality assurance office and administration building for the Navy. A portion of the building historically housed chemical and testing laboratories for an unknown duration. Based on information provided by former Navy employees, historical laboratory operations were confined to portions of the first and second floor of the building. Laboratory operations ceased in 2000 and the building has remained vacant since that time. The Navy has transferred the building for re-use by the city of North Charleston. A Site Location Map is included as Attachment 1.

HEALTH AND SAFETY:

Safety concerns exist with regards to the building itself and the unknown nature of laboratory wastes within. To address potential structural issues, Resolution Consultants contracted Britt, Peters, and Associates, a South Carolina certified Professional Engineering Company, specializing in structural engineering, to evaluate the building. Britt, Peters, and Associates concluded that since the structural components remain in fair to good condition, shoring of the floor system is not required, prior to conducting the visual inspection.



Due to the age of the building and the extended period of time that the building has remained vacant, the presence of asbestos containing materials, lead based paint, mold, and pigeon feces was considered during health and safety planning. Additional precautions were necessary, since details associated with historical laboratory testing activities at Building 13 were not available and the nature of contamination on laboratory equipment and waste within the historical laboratory work areas are unknown. In planning for field activities, Resolution Consultant and subcontractors prepared an Accident Prevention Plan, dated February 2013. The Accident Prevention Plan, which was based on information available at the time, was approved by appropriate Navy safety personnel and reviewed by all onsite workers. Health and Safety materials, including the Structural Engineering Summary Report and the Accident Prevention Plan, are included as Attachment 2.

FINDINGS:

As detailed in **EnviroSmart's Technical Report and Inventory List of Laboratory Waste Chemicals and Equipment Inspection Building 13 — Charleston Naval Complex, North Charleston, South Carolina**, dated April 2013 and included as Attachment 3, the visual inspection was accomplished on 26 March and 27 March 2013. Each room of the three story building was thoroughly inspected and an inventory of laboratory chemicals, waste, and laboratory equipment was recorded. Although, the majority of laboratory waste was removed prior to the inspection, limited materials remain onsite. **Per EnviroSmart's report, most of this waste is non-hazardous in nature and can be handled as special waste and sent to a Sub-Title D, special waste landfill.**

Laboratory equipment remaining onsite varies in size from handheld to heavy equipment. **EnviroSmart's summary report recommends that laboratory equipment be rinsed and wiped down, prior to transfer of the building.** Special attention should be paid during the decontamination of fume hoods, due to safety concerns associated with their potential historical use for acid digestion of metals for Atomic Absorption Spectroscopy. An inventory of laboratory chemicals/waste and laboratory equipment, along with photographs taken during the inspection, **is included in EnviroSmart's summary report (Attachment 3).**

RECOMMENDATIONS AND ESTIMATED COSTS:

Resolution Consultants understands that the Navy plans to decontaminate laboratory equipment and remove laboratory chemicals and waste from the building.

Pending award of a subsequent contract by the Navy, decontamination of laboratory equipment and laboratory chemical and waste removal efforts will be accomplished by an appropriately trained hazardous materials subcontractor, under the direct oversight of Resolution Consultants. Laboratory chemicals and waste materials will be transported, under profiles and manifest, to an appropriately certified and Navy approved disposal facility.



For planning purposes, estimated costs to accomplish such efforts are approximately \$85,000, under the following assumptions:

- Project Management/Work Planning: \$7,000
- Supplemental Structural Evaluation (assumes no shoring required): \$1,500
- Health and Safety Planning (assumes work can be completed in Level C PPE): \$4,000
- Fieldwork and Documentation (assumes 10 field days): \$60,000
- Disposal of Non-Hazardous Materials, Empty Glassware (assumes 7 drums): \$2,000
- Disposal of Flammable Liquids (assumes 1 drum): \$500
- Disposal of Cathode Lamps (assumes up to 60 lamps): \$500
- Disposal of Insecticide (assumes 1 5-gallon pail): \$500
- Disposal of Propane Cylinders (assumes 2 cylinders): \$500
- Material Transportation Costs (assumes up to 15 drums): \$4,000
- Summary Reporting and Administrative Record: \$4,500

Resolution Consultants appreciates the opportunity to provide environmental services to the Navy. Should you have any questions concerning information, as presented herein, feel free to contact me via email at dwarren@ensafe.com or telephone at 843-884-0029.

Sincerely,

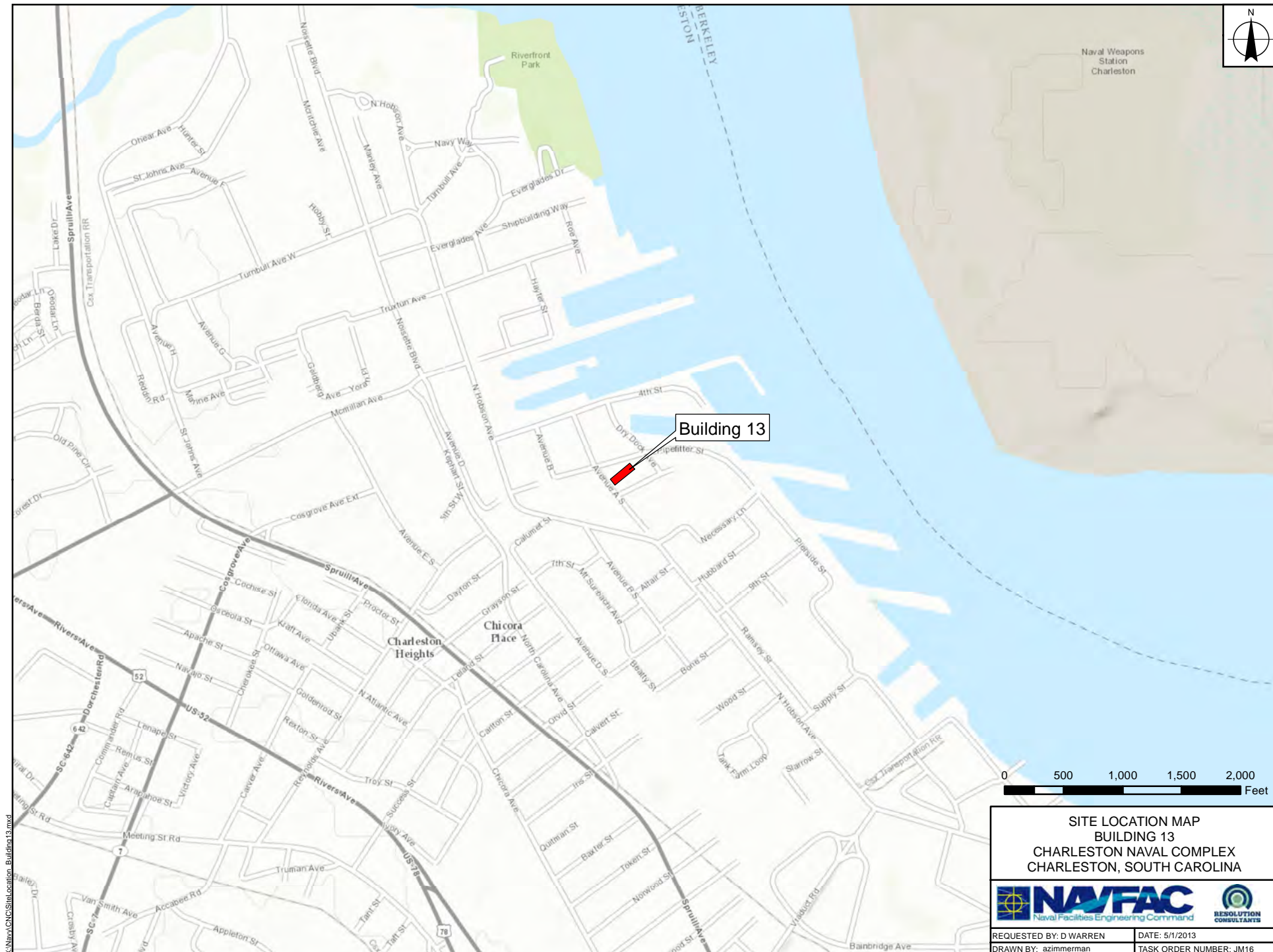


By: David Warren
Project Manager, Resolution Consultants

Attachments: Attachment 1 — Site Location Map
Attachment 2 — Health and Safety Materials
Attachment 3 — EnviroSmart Report dated 1 May 2013



Attachment 1
Site Location Map



X:\Naval\GNC\SiteLocation_Building13.mxd

0 500 1,000 1,500 2,000 Feet

SITE LOCATION MAP
BUILDING 13
CHARLESTON NAVAL COMPLEX
CHARLESTON, SOUTH CAROLINA



REQUESTED BY: D WARREN

DATE: 5/1/2013

DRAWN BY: azimmerman

TASK ORDER NUMBER: JM16

Attachment 2
Health and Safety Materials



January 8, 2013

c/o Mr. David Warren
Resolution Consultants
313 Wingo Way
Mount Pleasant, South Carolina 29464

Re.: Report of Structural Evaluation
Building 13 - Charleston Naval Complex
SOW No. JM16CNCRFP2
BPA Job #12428

Dear Mr. Warren:

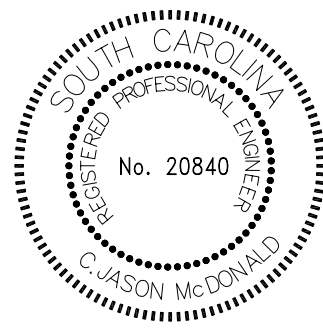
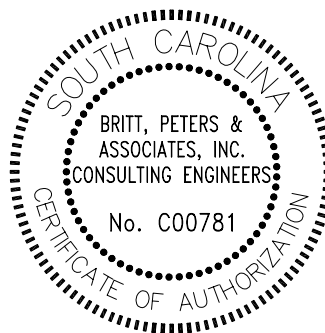
Britt, Peters & Associates, Inc. (BPA) is pleased to submit this Structural Evaluation Report (SER) for the above-reference site. The purpose of our services was to identify readily visible deficiencies associated with the building's primary structural components.

This report presents project information, which includes survey procedures and limitations, along with our findings, conclusions and recommendations. We appreciate your selection of BPA for this project and look forward to assisting you further on this and other projects. If you have any questions, please contact us.

Sincerely,

BRITT, PETERS & ASSOCIATES, INC.

C Jason McDonald, PE, SE
Vice President





STRUCTURAL EVALUATION REPORT

BUILDING 13 - CHARLESTON NAVAL COMPLEX
SOW No. JM16CNCRFP2



Prepared by:

Britt, Peters & Associates, Inc.
1100 Queensborough Blvd
Suite 202
Mount Pleasant, SC 29464
BPA Job No. 12428

January 8, 2013

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1. EXECUTIVE SUMMARY

a. General Description

Building 13, located at the Charleston Naval Complex, is a three-story building built in the early 1900's. Attached with a connector is a smaller Boiler House, which was not observed.

Per the drawings and our observations, it is a steel and concrete structure with wood and plaster finishes. The total footprint of the building is approximately 13,200 square feet. Inside, there is one mezzanine, making the total square footage of the building approximately 41,000 square feet (reference exhibits one through five).

b. General Physical Condition

Overall, the structural components are in fair condition for its current age; however the building does not appear to have been maintained in quite some time.

During our walk-through survey, we observed deferred maintenance issues and water intrusion issues. In addition, flaking of the underside of the concrete slab or plaster finish, it was difficult to tell, was noted and corroded reinforcing was exposed (reference exhibit 17).

2. PURPOSE AND SCOPE

The purpose of this Structural Evaluation Report (SER) is to identify readily visible deficiencies associated with the building's primary structural components by performing a walk-through survey, review existing documents, and interview personnel familiar with the building and to provide a safe path for personnel to enter the building and remove laboratory equipment from the second floor.

ASTM 2018-08 "Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process" was used to perform this assessment and the Structural Evaluation Report (SER). This report provides a summary of the information obtained during the Walk-Through Survey, the Document Review and Interviews.

3. SYSTEM DESCRIPTION AND OBSERVATION

a. Overall General Description

In the simplest terms, the building is a 64' by 206' rectangle, utilizing load-bearing walls and steel floor and roof framing. Most of the structure was concealed by finishes and fire proofing (reference exhibit 6). Although, it was apparent during our walk-through that the building was built in general compliance with the construction documents. Typical eave height of the building is 54'-4" per the cross section on the existing drawings.

This type of building consists of unreinforced clay brick masonry. Interior steel columns support a system of steel beams which in turn support what appears to be a 5-1/4" cast-in-place concrete slab, which is considered stiff relative to the unreinforced masonry walls and interior framing.

b. Primary Structural Components

i. Foundation

Based upon our review of the existing structural drawings, the foundation for the building consists of deep pile foundations. The existing slab is supported at grade and has regularly spaced control joints. Some minor shrinkage cracking was observed in the slab-on-grade, but no active signs of distress were noted. In our opinion, the slabs and control joints are in good condition (reference exhibit 7). Some of the floor finishes have deteriorated (reference exhibit 8).

Rectangular concrete pile caps support interior columns while a pile supported perimeter footing supports the exterior masonry walls. We did not observe any obvious issues with the foundations and no deficiencies related to the foundation were reported by the Facility Manager for CMMC.

ii. Building Frame

The primary structural system for the 2nd floor and 3rd floor consists of wide-flange steel (or iron) columns, wide flange steel (or iron) beams, and wide flange steel (or iron) joists to support the concrete slab (reference exhibit 9).

The primary structural system for the roof is a series of steel (or iron) trusses.

Per the construction documents, the roof diaphragm consists of horizontal steel "X" bracing. This "X" bracing is either directly connected to the lateral force resisting elements or is connected to "drag struts" that collect the load and transfers it into the shear walls.

Lateral forces (seismic and wind) are resisted by the exterior masonry walls or shear walls. The exterior walls did not exhibit any unusual cracking.

Under room 203 and 206, flaking (reference exhibit 17) along the underside of the concrete slab was observed and appeared to be caused by moisture damage to the reinforcing. It was unclear during our visit if the damage was to the concrete or to the plaster finish. In either case, the wire mesh reinforcing was corroded. No significant cracking was observed in the elevated floor slabs.

The stringers for the main stairs appears to be constructed from heavy timber (reference exhibit 11). We did not notice any unusual sign of distress in the stair members nor did the stairs appear unstable.

In general, the architectural finishes and non-structural ceiling framing have suffered the most from the elements (reference exhibits 10, 13, 14, and 16). The Facility Manager for CMMC mentioned termite damage in the offices. We observed moisture damage to the floor underlayment and piles of debris built up in some of the rooms (room 202). Some rooms had contained corrosive chemicals (room 203) that may or may not have contributed to some of the concrete flaking.

We did not observe the Boiler House (reference exhibit 18). However, the floor finishes appeared to be more deteriorated than the main building.

c. Conclusions and Recommendations

It is our opinion that the structural components of this building are in fair to good condition. We walked through most of the corridors and rooms and did not observe any obvious damage to the structural components other than what we already mentioned.

Some rooms are filled with laboratory equipment (rooms 201 and 203 and 206). Some rooms are filled with debris from where the ceiling had collapsed (room 204). We recommend extreme caution if these rooms must be entered as the top of the floor slab could not be observed. We did observe the underside of the floor slab and noted flaking of the concrete or plaster under rooms 203 and 206. Because of the uncertainty in these rooms, we recommend a limited number of people (2 to 3) be used to remove any equipment. However, shoring of the floor system should not be required. Heavy equipment (over 250 lbs) should be broken down into smaller components to limit the load on the floor and stairs.

4. ADDITIONAL CONSIDERATIONS

Latitude	32.8607
Longitude	-79.9647

Using the 2006 International Building Code, the following are the current environmental loads adopted for the site.

Ground Snow Loads = 5 psf

Wind Speed = 130 mph (3-second gust)

Short Period Spectral Accel, $S_s = 126.3\%g$ (2008 USGS Maps)

Long Period Spectral Accel, $S_1 = 40.6\%g$ (2008 USGS Maps)

This building is located within a region of High Seismicity and a Hurricane Prone Region

Further Inquiry

In addition to the items presented in this report, the following items were noted:

Seismic: Based upon the age of the main building, this building does not meet the Benchmark Provisions of ASCE 31-03 "Seismic Evaluation of Existing Buildings". As such a Tier 1 seismic evaluation would need to be performed if this acceptance criterion were required and further investigation and material testing would be necessary.

5. DOCUMENT REVIEW AND INTERVIEWS

Drawings reviewed consisted of a partial set of Plans of Proposed Building for Equipment, Building No. 13, US Navy Yard, Charleston, SC, dated February 1903

We met with Rick Brown, Facility Manager for CMMC, and conducted a brief interview with him to discuss the building and its components. Mr. Brown informed us that he knew of no significant structural issues with the property beyond general maintenance and termite damage in some of the offices.

6. OUT OF SCOPE CONSIDERATIONS

The following activities are excluded from the scope of this SER. These should not be construed as all-inclusive or imply that any exclusion not specifically identified is a SER requirement under ASTM E2018-08.

Identifying capital improvements, enhancements, or upgrades to building components, systems, or finishes.

Removing, relocating, or repositioning of materials, ceiling, wall, or equipment panels, furniture, storage containers, personal effects, debris material or finishes; conducting exploratory probing or testing; dismantling or operating of equipment or appliances; or disturbing personal items or property, that obstructs access or visibility.

Preparing engineering calculations to determine any system's, component's, or equipment's adequacy or compliance with any specific or commonly accepted design requirements or building codes, or preparing designs or specifications to remedy any physical deficiency.

Taking measurements or quantities to establish or confirm any information or representations provided by the owner or user, such as size and dimensions of the subject property or subject building; any legal encumbrances, such as easements; dwelling unit count and mix; building property line setbacks or elevations; number and size of parking spaces; etc.

Reporting on the presence or absence of pests such as wood damaging organisms, rodents, or insects unless evidence of such presence is readily apparent and material during the course of the field observer's walk-through survey or such information is provided to the consultant by the owner, user, property manager, etc.

Reporting on the condition of subterranean conditions, such as soil types and conditions, underground utilities, separate sewage disposal systems, wells; systems that are either considered process-related or peculiar to a specific tenancy or use; or items or systems that are not permanently installed.

Entering or accessing any area of the premises deemed to potentially pose a threat of dangerous or adverse conditions with respect to the field observer's health or safety, or to perform any procedure, that may damage or impair the physical integrity of the property, any system, or component.

Operating or witnessing the operation of lighting, lawn irrigation, or other systems typically controlled by time clocks or that are normally operated by the building's operation staff or service companies.

Providing an environmental assessment or opinion on the presence of any environmental issues such as potable water quality, asbestos, hazardous wastes, toxic materials, the location or presence of designated wetlands, mold, fungus, IAQ, etc.

7. QUALIFICATIONS

The following individuals performed this Structural Evaluation Report:

C Jason McDonald, PE, SE – Britt, Peters & Associates, Inc.

8. LIMITING CONDITIONS

Most of the structural elements were hidden. A structural condition is considered hidden if it is concealed by existing architectural finishes or if it cannot be investigated by reasonable visual observation.

No SER can wholly eliminate the uncertainty regarding the presence of physical deficiencies and the performance of a subject property's building systems. Preparation of a SER in accordance with ASTM 2018-08 is intended to reduce, but not eliminate, the uncertainty regarding the potential for component or system failure and to reduce the potential that such component or system may not be initially observed. This ASTM also recognizes the inherent subjective nature of a consultant's opinions as to such issues as workmanship, quality of original installation, and estimating the RUL of any given component or system. The ASTM recognizes a consultant's suggested remedy may be determined under time constraints, formed without the aid of engineering calculations, testing, exploratory probing, the removal or relocation of materials, design, or other technically exhaustive means. Furthermore, there may be other alternative or more appropriate schemes or methods to remedy a physical deficiency. The consultant's opinions generally are formed without detailed knowledge from those familiar with the component's or system's performance.

In defining good commercial and customary practice for conducting a baseline SER, the goal is to identify and communicate physical deficiencies to a user. The term physical deficiencies means the presence of conspicuous defects or material deferred maintenance of a subject property's material systems, components, or equipment as observed during the field observer's walk-through survey. This definition specifically excludes deficiencies that may be remedied with routine maintenance, miscellaneous minor repairs, normal operating maintenance, etc., and excludes de minimis conditions that generally do not present material physical deficiencies of the subject property.

As such the limitations of our SER are consistent with the general limitations of the ASTM Standard.

9. EXHIBITS



EXHIBIT 1



EXHIBIT 2



EXHIBIT 3



EXHIBIT 4



EXHIBIT 5



EXHIBIT 6



EXHIBIT 7



EXHIBIT 8



EXHIBIT 9



EXHIBIT 10



EXHIBIT 11



EXHIBIT 12



EXHIBIT 13



EXHIBIT 14



EXHIBIT 15



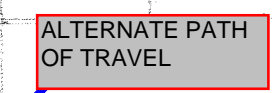
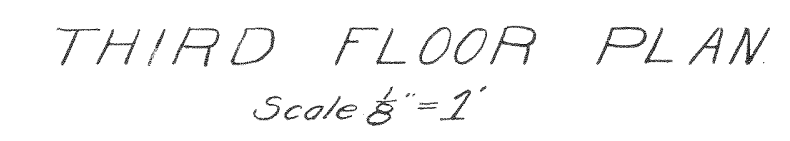
EXHIBIT 16



EXHIBIT 17



EXHIBIT 18



6-13-9 NAVY YARD, CHARLESTON, S
NOVEMBER, 10, 1903
BUILDING NO. 13
EQUIPMENT BUILDING

Sca.

ACCIDENT PREVENTION PLAN

VISUAL INSPECTION AND INVENTORY CHARLESTON NAVAL COMPLEX; BUILDING 13 CHARLESTON, SOUTH CAROLINA

Revision: 0

**Resolution Consultants Job Number:
0888812793**

Prepared For:

**Department of the Navy
BRAC Program Management Office Southeast
4130 Faber Place Drive
North Charleston, South Carolina 29405**

and



**Naval Facilities Engineering Command Southeast
Bldg. 135 North
P.O. Box 30
Jacksonville, Florida 32212-0030**

Prepared By:



**Resolution Consultants
A Joint Venture of AECOM & EnSafe
1500 Wells Fargo Building
440 Monticello Avenue
Norfolk, Virginia 23510**

**Contract Number: N62470-11-D-8013
Delivery Order Number: JM16**

February 2013

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PREFACE

This Accident Prevention Plan (APP) has been developed in accordance with ER 385-1-92, *Safety and Occupational Health Requirements for Hazardous, Toxic, and Radioactive Waste Activities*. The APP covers each of the applicable APP elements identified in Appendix A of Engineering Manual 385-1-1 (United States Army Corps of Engineers, 2008). An APP is a safety and health program and policy document.

This APP interfaces with Resolution Consultants' **overall safety and health program and policies**, and is applicable site-wide for all planned investigations at Charleston Naval Complex including the visual inspection and inventory at Building 13 (see Section 2.4). A Site Safety and Health Plan (SSHP) specific to Resolution Consultants activities and a Health and Safety Plan specific to activities to be performed by our subcontractor, Envirosmart, are included as Appendices H and I to this APP. Such plans cover elements, as outlined in Section 28.A.02 b of Engineering Manual 385-1-1.

The purpose of this APP is to establish site-specific safety and health procedures, practices, and equipment to be implemented and used to protect personnel from the potential occupational safety and health hazards associated with the field investigation activities. The APP assigns responsibilities, establishes standard operating procedures, and provides for contingencies that may arise while operations are being conducted.

Project work will be performed in accordance with applicable federal, state, and local government safety and occupational health laws and regulations including Occupational Safety and Health Administration standards 29 Code of Federal Regulations 1910.120 and 1926.65. The content of the APP is subject to review and revision, as new information becomes available.

This APP has been developed based on known and anticipated potential hazards that may arise during performance of project tasks. At least one copy of the APP and applicable SSHP for the specific site, and the **Resolution Consultants'** United States Operations Safety, Health, and Environmental (SH&E) Manual, will be maintained in a readily accessible onsite location for review at all times during all field activities. The requirements established by this APP are mandatory and apply to all Resolution Consultants employees, subcontractors, and any other personnel entering designated work areas at the project sites during active field operations. Record keeping will be maintained in accordance with this APP and the applicable SH&E Program Standard Operating Procedures. In the event of a conflict between this APP, the SSHP, the Standard Operating Procedures, and/or federal, state, and local regulations, workers shall follow the most stringent/protective requirements.

CHANGES TO THE APPROVED APP

It is understood that this APP is a dynamic document and changes in the scope of work, field changes, or unanticipated site conditions may require APP modification and approval in order to retain field safety compliance with contract requirements and Occupational Safety and Health Administration regulations. All changes to the APP shall be prepared by the SH&E Manager, and approved by the Program Manager and Project Manager. All such modifications will be supplied to Naval Facilities Command for review and approval.

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Appendix E	Competent/Qualified Persons Proof of Competency
Appendix F	HAZWOPER Training and Medical Monitoring Documentation
Appendix G	First Aid and CPR Trained Individuals
Appendix H	Resolution Consultants Site Safety and Health Plan
Appendix I	Envirosmart Health and Safety Plan

List of Acronyms and Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
AHA	Activity Hazard Analysis
ANSI	American National Standards Institute
APP	Accident Prevention Plan
CFR	Code of Federal Regulations
CIH	Certified Industrial Hygienist
CHST	Construction Health and Safety Technician
CNC	Charleston Naval Complex
CSP	Certified Safety Professional
DOT	Department of Transportation
EM	Engineering Manual
ERP	Emergency Response Plan
ERT	Emergency Response Team
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSI	Hazardous Substance Inventory
MSDS	Material Safety Data Sheet
NAVFAC	Naval Facilities Command
OSHA	Occupational Safety and Health Administration
PHSP	Programmatic Health and Safety Plan
PM	Project Manager
PPE	Personal Protective Equipment
SH&E	Safety, Health and Environmental
SOP	Standard Operating Procedure
SSHP	Site Safety and Health Plan
SSHO	Site Safety and Health Officer
TLV	Threshold Limit Value

1. SIGNATURE SHEET

This Accident Prevention Plan (APP) was prepared for employees performing field activities at Charleston Naval Complex (CNC), South Carolina. It was prepared based on the best available information regarding the physical and chemical hazards known or suspected to be present at the project sites. While it is not possible to discover, evaluate, and protect in advance against all possible hazards that may be encountered during the completion of the project, adherence to the safety and health program requirements of this APP will significantly reduce the potential for occupational injury.

By signing below, I acknowledge that I have reviewed and hereby approve this APP for the field activities at CNC, Charleston, South Carolina. This APP has been written for exclusive use by Resolution Consultants employees and its subcontractors. This APP was written for specified site conditions, dates, and personnel, and must be amended if these conditions change.

Plan Preparer:



Date: February 2013

1.a. John Knopf, CSP
Safety, Health, & Environmental Manager
Resolution Consultants

Plan Concurrence:



Date: February 2013

1.b. Dave Warren
Project Manager
Resolution Consultants



2. BACKGROUND INFORMATION

2.a. Contractor

Resolution Consultants, a joint-venture between AECOM and EnSafe Inc., is the prime contractor.

2.b. Contract Number

The project is being conducted under the Comprehensive, Long-term Environmental Action Navy contract number N62470-11-D-8013, Delivery Order JM16.

2.c. Project Name

Visual Inspection and Inventory at CNC — Building 13 in Charleston, South Carolina.

2.d. Project Description

As defined in Resolution Consultant's Plan of Action/Cost Estimate, dated May 15, 2012, the project scope of work includes the visual inspection of a former Navy test laboratory in Building 13. The purpose of the visual inspection is to identify laboratory chemicals and laboratory waste remaining in the now vacant building. Furthermore, laboratory equipment will be visually inspected to determine if decontamination is necessary, prior to facilitating offsite disposal. The visual inspection will be completed by **Envirosmart**, a qualified hazardous materials subcontractor, and overseen by Resolution Consultants. Following the visual inspection, Resolution Consultants will prepare a summary report to present the recommended approach for characterizing and disposing of laboratory chemicals and laboratory waste and decontamination of laboratory equipment. Estimated costs for such efforts will be noted in the summary report.

2.e. Project Location

As depicted on Figure 2-1, Building 13 is located at the CNC in Charleston, South Carolina.

2.f. Contractor Accident Experience

A copy of the Occupational Safety and Health Administration (OSHA) 300 form is included in Appendix A.

2.g. Phases of Work and Hazardous Activities Requiring an Activity Hazard Analysis

Resolution Consultants' tasks planned as part of field operations that require an Activity Hazard Analysis (AHA) include oversight of visual inspection activities.



AHAs for each of the investigation tasks are included as part of the Site Safety and Health Plan (SSHP) discussed in Section 9.gg. of this APP.



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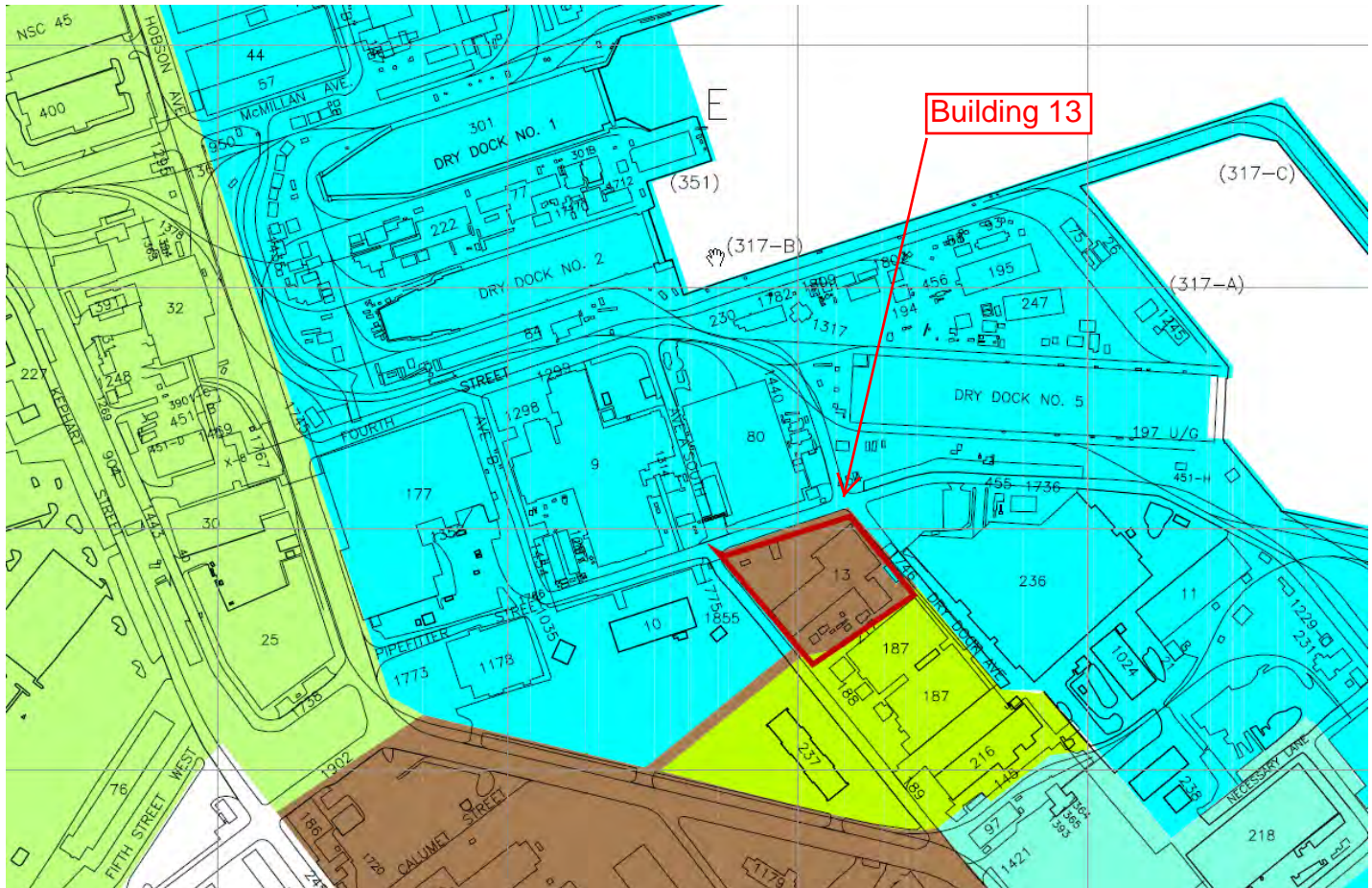


Figure 2-1
Location Map
Building 13, Charleston Naval Complex, Charleston, South Carolina





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3. STATEMENT OF SAFETY AND HEALTH POLICY

Resolution Consultants believes that the safety and health of our employees and the responsible stewardship of the built and natural environment are critical elements to business growth and success. Resolution Consultants demonstrates commitment to this fundamental responsibility by embracing **"Safety" as one of our Core Values**. Resolution Consultants has developed and implemented a Safety, Health, and Environmental (SH&E) Programmatic Health and Safety Plan (PHSP) for United States operations, which establishes the framework to maintain effective SH&E management, monitoring, measurement, documentation, communication, and methods to promote continuous improvement.

SH&E Programmatic Health and Safety Plan Overview

The SH&E PHSP is based on proven management principles and practices. It consists of an organized framework that is continually monitored and periodically reviewed in response to changing internal and external factors. The system is designed to record SH&E actions, program performance, assist in communications, awareness, facilitates auditing, and management involvement and review. All Resolution Consultants employees are responsible for maintaining compliance with the PHSP, SH&E Policy, and Safe Operating Procedures. This SH&E Management System is based on the four-step problem solving process of **"Plan-Do-Check-Act" methodology**, which incorporates five major operational components:

- **Policy** — A clear SH&E Policy is the central focus of the PHSP. Resolution Consultants management and employees are fully committed to maintain compliance with this policy. Resolution Consultants' **current corporate safety** and health policy statement detailing the commitment to providing a safe and healthful workplace for all employees is included as Appendix B of this APP
- **Planning** — A comprehensive plan of action supports the achievement of the SH&E Policy
- **Implementation and Operation** — Resolution Consultants management provides the resources, including human and financial, for effective SH&E management. The PHSP includes procedures and systematic controls for the application of the resources
- **Checking and Corrective Action** — Performance and the effectiveness of SH&E controls are continuously monitored and evaluated. Corrective actions are taken as necessary



- **Management Review** — The PHSP is reviewed and continually improved with the aim of improving overall SH&E performance

Through implementation of the PHSP, Resolution Consultants has established a uniform, systematic and cost-effective approach to addressing safety, health, and environmental issues and concerns associated with Resolution Consultants personnel and services. The PHSP has been structured to align itself with the key elements of OSHA regulations.

Redacted copies or excerpts of the PHSP may be made available at the discretion of Resolution Consultants without waiving its right to maintain the confidentiality of such materials.

SH&E Policy Overview

It is the policy of Resolution Consultants to provide a safe and healthy work environment for all of its employees. Resolution Consultants considers no phase of operations or administration to be of greater importance than injury and illness prevention. Safety takes precedence over expediency and shortcuts. Resolution Consultants believes that every accident and every injury is avoidable and every reasonable step will be taken to reduce the possibility of injury, illness, or accident.

Resolution Consultants is fully committed to protecting the safety and health of our employees and meeting our obligations with respect to the protection of others affected by our activities. We strive to ensure that our operations do not pose unreasonable safety or environmental risks. In all of our activities, we will develop and implement appropriate systems and procedures designed to comply with applicable laws, legislation, licensing requirements, and stakeholder expectations.

In order to guide the implementation efforts required by this policy, the Resolution Consultants Management Committee, Program Management Team, and Regional Leaders collaborate to establish SH&E programs that:

- **Incorporate a “ZERO injury” and “environmental sustainability” philosophy into design standards and project review processes**
- Recognize those who contribute to their improved SH&E performance
- Comply with all applicable SH&E rules and regulations at the local, state, and national level
- Meet client SH&E requirements and standards



- Where no specific regulation exists, comply with Resolution Consultants standards and appropriate industry practices
- Report on performance relative to short- and long-term SH&E metrics designed to help achieve established goals
- Consult with, listen to, and respond to employees, customers and partners in order to continuously improve their SH&E performance.

All employees will be responsible for:

- Conducting themselves in accordance with directives, standards and procedures established by their applicable SH&E program
- Temporarily suspending their personal work activities and requesting guidance from their supervisor before continuing a task when they identify a condition or practice that creates a serious safety, health, or environmental risk
- Immediately reporting safety, health, and/or environmental incidents to their supervisor

Resolution Consultants SH&E policy is formally reviewed annually. However, if substantial changes occur in legislation, organization and/or other business drivers, changes may be made on an interim basis.

Safety Program Goals

Consistent with the Resolution Consultants corporate SH&E policy, the safety program goals under this contract are ZERO injuries and accidents.

SH&E Standard Operating Procedures

Resolution Consultants SH&E Standard Operating Procedures (SOPs) establish minimum safety requirements and guidelines for Resolution Consultants United States operations and business lines. Resolution Consultants has developed individual SOPs that serve as the basis for the safe execution of specific tasks associated with field operations. These range from stop work and management authority, to the safe execution of confined space entries. Numerous SOPs are referenced throughout this APP and are included as Appendix C. A copy of the SOPs will be kept onsite at all times.

4. RESPONSIBILITIES AND LINES OF AUTHORITY

4.a. Statement of Responsibility

Resolution Consultants has the ultimate responsibility for the successful implementation and management of the CNC safety and health program (see Appendix D).

4.b. Personnel Responsible for Safety

All personnel are responsible for continuous adherence to the safety and health procedures presented in this APP and attached SSHP during the performance of work. No person may work in a manner that conflicts with the intent of, or the inherent safety and environmental precautions expressed in these procedures. After due warnings, the company will dismiss from the site any person who violates safety procedures.

The Resolution Consultants organization chart for the management of safety at both the corporate and project level for this project is presented as Figure 4-1. The positions/responsibilities presented in the organization chart are discussed below.

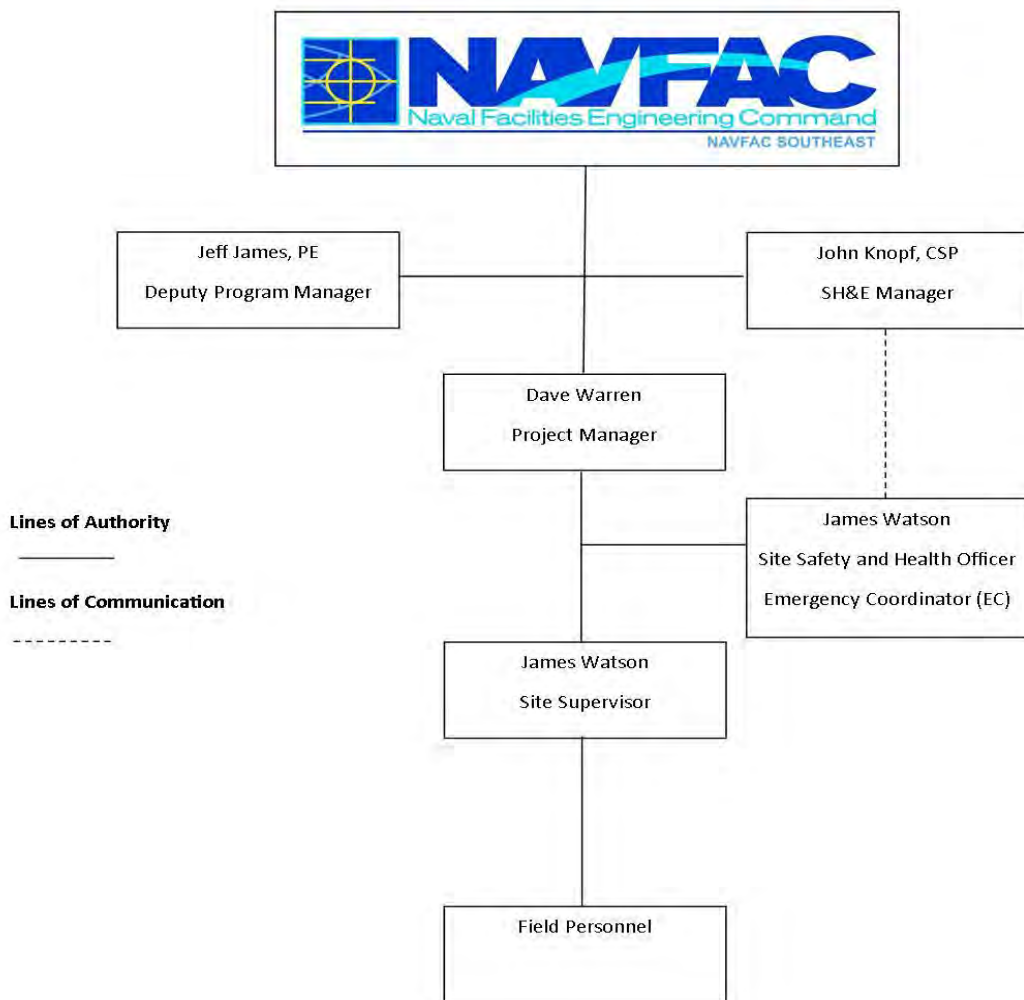


Figure 4-1 Safety Organization Chart

Deputy Program Manager [Mr. Jeff James, P.E.]

The Resolution Consultants Deputy Program Manager is responsible for supporting the establishment and oversight of the overall health and safety program presented in the APP. The Deputy Program Manager will sign the APP prior to final submittal.

SH&E Manager [Mr. John Knopf, CSP]

The Resolution Consultants SH&E Manager is a Certified Safety Professional (CSP) with 19 years of experience in managing safety and occupational health at hazardous waste site cleanup operations.

The SH&E Manager is responsible for developing, maintaining, and overseeing the implementation of the APP and SSHP. The SH&E Manager will approve the APP and SSHP prior to final submittal. Specific responsibilities of the SH&E Manager includes the following:

- Approve the appointment of the Site Safety and Health Officer (SSHO) and ensure that he/she has the appropriate training and competencies to perform the duties
- Participate in quality control planning such as development of Quality Control Plans, safety and health checklists, and perform design and system safety analyses as appropriate
- Visits the project as needed to audit the effectiveness of the safety and health program
- Provide safety and health expectations and flow down requirements for subcontractor statements of work
- Be available on a 24-hour basis for consultation with SSHO during onsite emergencies or as needed
- Coordinate any modifications to the safety plans with the SSHO and Project Manager (PM), as required
- Evaluate occupational exposure monitoring/air sampling data and adjust APP/SSHP requirements as necessary
- Provide continued support for upgrading and/or downgrading the level of personal protective equipment (PPE)

- Participate in the investigation of unplanned events, high loss potential incidents, and accidents
- Assist in development of onsite training, which will be provided by the SSHO

Project Manager [Dave Warren]

The Resolution Consultants PM represents the company in all aspects of the project work and is responsible for the following:

- Providing leadership by, among other things, setting an example for all site personnel through actions and words regarding the importance of proper health and safety practices and holding project staff accountable for safety performance
- Coordinating all work performed by Resolution Consultants personnel and subcontractors for the project
- Ensuring the APP/SSHP is approved prior to commencing field operations
- Ensuring all required PPE, other types of equipment and instruments, safety incentives, and other safety-related items are budgeted and provided
- Ensuring that subcontractor "Statements of Work" include appropriate safety provisions and expectations
- Ensuring that safety and health requirements are covered during kickoff meetings
- Participating in the investigation of, and ensuring that unplanned events, high loss potential incidents, and accidents are properly reported to Naval Facilities Command (NAVFAC)
- Notifying the SH&E Manager of any changes in the scope of work or site conditions, and ensuring that the APP/SSHP is updated to address new hazards
- Immediately stopping operations in the event of an emergency or serious hazard, in order to protect personnel and the environment
- Preparing and submitting required work progress reports

Site Safety and Health Officer [James Watson]

The Resolution Consultants SSHO has more than 10 years of industrial hygiene and environmental, health, and safety related experience and will be onsite at all times when work is being conducted. The SSHO will be responsible for managing, implementing, and enforcing Resolution Consultants' health and safety program in accordance with the accepted APP. The SSHO will be a competent person that can identify existing and predictable hazards in the working environment or working conditions that are dangerous to personnel, and who has authorization to take prompt corrective measures to eliminate them. The SSHO will have the authority and is responsible for the following actions:

- Be present during investigation operations to implement the APP/SSHP
- Inspect site activities to identify safety and occupational health deficiencies and correct them
- Coordinate changes/modifications to the APP/SSHP with the SH&E Manager, PM, and Site Supervisor
- Conduct project specific OSHA training
- Ensure all field personnel, including any subcontractor personnel, assigned to the project have satisfied requirements for training and medical surveillance as specified by 29 Code of Federal Regulation (CFR) 1910.120, and that records of training and medical approval are available and maintained for each person
- Oversee compliance with the APP/SSHP procedures and OSHA regulations through daily inspections
- Serve as a member of the quality control staff on matters relating to safety and health
- Stop work if unacceptable safety and health conditions exist, and take necessary action to re-establish and maintain safe working conditions
- Operate and maintain air monitoring equipment required at a site for airborne contaminants and prepare air monitoring reports

- Maintain all required safety and health records (e.g., OSHA 300 Logs, incident/accident reports, training certificates and qualifications, equipment checklists, safety plans, air monitoring data and reports, etc.) throughout the life of the project

Site Supervisor

The Site Supervisor will manage the onsite investigation operations in accordance with the approved Work Plan and APP/SSHP. The Site Supervisor will coordinate all onsite personnel and equipment conducting investigation operations in a safe manner. The Site Supervisor will coordinate all work with the SSHO to ensure that all safety concerns are adequately addressed and controlled. The Site Supervisor will immediately stop work in the event of an emergency or serious hazard in order to protect personnel and the environment. The Site Supervisor will work with the SH&E Manager, PM, and SSHO in coordinating changes/modifications to the APP/SSHP, as needed.

Field Personnel

Field Personnel will be responsible for understanding and following the APP/SSHP and performing their work in a safe and responsible manner. Specific responsibilities will include the following:

- Act in a responsible manner at all times in order to prevent incidents, injury, and/or exposure to themselves and their co-workers
- Report any and all incidents, including near misses, to the Site Supervisor or SSHO
- Attend and participate in all daily health and safety tailgate meetings
- Participate in the development of AHAs as required, and follow the provisions as outlined in the final AHAs
- Follow instructions and directions of the Site Supervisor and SSHO
- Utilize the prescribed PPE provided for each task
- Following all field safety procedures for safe work practices (e.g., the buddy system, communication, site control, decontamination, evacuations, and related emergency procedures)



- Perform only those tasks they have been instructed to perform if they are trained, qualified, and capable of performing safely at the time of assignment
- Report any personal condition that could affect their safety and/or the safety of co-workers (e.g., fatigue, drowsiness, severe illness, impairment by prescription medications, influence by drugs and alcohol, emotional stress, or other condition)
- Ensure that no work tasks are performed in deviation from the APP/SSHP and/or the initial instructions of the Site Supervisor and SSHO

Site Visitors

Site visitors will:

- Participate in a site briefing before leaving the administrative office or site entry point
- Follow all site rules and instructions
- Be escorted at all times by authorized personnel unless otherwise approved by the SSHO
- Wear PPE provided.

Conformance of everyone with these responsibilities is necessary to achieve the goals of the APP/SSHP. Failure to do so could result in removal from the site.

4.c. Names of Competent and Qualified Personnel

Competent persons are qualified individuals that can identify existing and predictable hazards in the working environment or working conditions that are dangerous to personnel and have authorization to take prompt corrective measures to eliminate them (see Appendix E). The current tasks planned do not require the use of any specific 'competent' personnel as identified by OSHA. Should the job tasks change, which identify a specific competency, Resolution Consultants will amend this APP to reflect compliance with the updated project tasks.

Title	Inspection Role	Name	Proof of Competency
NA	NA	NA	NA

4.d. Competent Person Work Requirements

In order to complete investigation tasks, an OSHA-designated competent person must be onsite to perform the required daily inspections of equipment and/or operations. No work will be performed unless a designated competent person is present on the job site. The training requirements for competent persons are specified in the SH&E SOP 05-202-*Competent Person Designation*.

4.e. Pre-Task Safety and Health Analysis Requirements

AHAs are used to identify hazards and hazard controls associated with a specific job function. AHAs focus on the relationship between the workers, the task, the resources required to complete the task, and the work environment. These variables must be evaluated to identify the potential hazards associated with the task. Once identified, steps can be taken to eliminate, reduce, or control the hazards to an acceptable risk level. Guidelines for developing AHAs are located in SH&E SOP 05-209-*Hazard Assessment and Project Planning*.

Stop Work Authority

All employees have the right and duty to stop work when conditions are unsafe, and to assist in correcting these conditions as outlined in SH&E SOP 05-002-*Stop Work Authority for Unsafe Work*. Whenever the SSHO determines that workplace conditions present an uncontrolled risk of injury or illness to employees, immediate resolution with the appropriate supervisor shall be sought. Should the Site Supervisor be unable or unwilling to correct the unsafe conditions, the SSHO is authorized and required to stop work, which shall be immediately binding on all affected Resolution Consultants employees and subcontractors. Upon issuing the stop work order, the SSHO shall implement corrective actions so that operations may be safely resumed. Resumption of safe operations is the primary objective; however, operations shall not resume until the SH&E Manager has concurred that workplace conditions meet acceptable safety standards. Reviewing and updating the appropriate AHA and other documentation may be necessary to document the change.

All stop work actions must be documented in the field notes and immediate contact made with the Resolution Consultants PM.

4.f. Lines of Authority

Figure 4-1 illustrates the lines of authority for the personnel responsible for project safety.

4.g. Noncompliance Policies and Procedures

Employee non-compliance with safety requirements is taken very seriously by Resolution Consultants management. Personnel not following procedures are warned and counseled on the proper safety procedures and if the problem persists, are again counseled with notations made in their permanent record. Continued non-compliance can lead to termination of employment.

Resolution Consultants has developed the following progressive discipline policy for the violation of safety requirements. Extremely careless or reckless violations may result in immediate termination.

First Violation: An oral warning will be given for the first violation of a SH&E requirement depending on the severity of the violation. The employee will be informed by his or her supervisor of the violation and of the correct safe practice or procedure. The supervisor will review with the employee all applicable safety and health workplace requirements and guidelines. The employee must sign a statement indicating understanding of those requirements and guidelines. The supervisor should inform the employee that future violations will result in higher levels of discipline and may lead to dismissal.

Second Violation: The employee may be given a written warning for the second documented safety and health requirement violation. This warning will specifically identify the violation. The warning will also refer the employee to applicable safety and health requirements and guidelines for review, and also show the date the employee previously read and signed the statement of understanding of safety and health requirements and guidelines. The employee, the **employee's supervisor, the department head, Human Resources, and the employee's personnel file** receive copies of the warning.

Third Violation: The employee may be given a final warning for the third documented violation of safety and health requirements or guidelines. This warning will specifically identify the violation. It will also state that any further violation of safety and health requirements and guidelines will result in dismissal. All persons who receive a copy of the previously written warning will receive a copy of the final warning.

Any Subsequent Violation: The employee may be dismissed for a subsequent violation. If dismissed, the employee will receive a letter specifically identifying the violation of the safety and health requirement or guideline, as well as rights of appeal through the grievance process.

Immediate Termination: On occasion, an employee can commit a violation of a safety and health requirement or guideline that is so careless and reckless, or that so endangers life or property, that it can be considered imminently dangerous. When this occurs, an employee can be dismissed immediately, without benefit of any warnings. An employee dismissed in this fashion will receive a letter specifically identifying the violation and setting out his/her right of appeal within the grievance process.

Discipline for Subcontractor Personnel: If noncompliance actions are committed by subcontractor personnel, Resolution Consultants will recommend that the employer discipline the employee. If the action continues, Resolution Consultants will have the employer remove the employee from the site.

Documentation: Employee warnings and disciplinary actions will be documented using Resolution Consultants' **Corporate Memorandum** format in a manner consistent with the requirements of this policy.

4.h Manager and Supervisor Accountability

Managers and supervisors are responsible for enforcing safety and health as part of their job descriptions. They are ultimately responsible for protecting the welfare of the employees, as well as minimizing the potential liability associated with on-the-job accidents. Annual performance reviews and incentive plans for managers and supervisors include the assessment of both the **individual's safety** performance as well as their project safety performance.

5. SUBCONTRACTORS AND SUPPLIERS

5.a. Subcontractor and Supplier Identification

The following types of subcontractors and suppliers will be utilized for field activities at Building 13:

- Envirosmart, a qualified hazardous materials subcontractor, will conduct the visual inspection
- Envirosmart's Health and Safety Plan is included as Appendix I

5.b. Subcontractor and Supplier Safety Responsibilities

Subcontractors

Each Resolution Consultants subcontractor is responsible for assigning specific work tasks to their employees. Each subcontractor's management will provide qualified employees and allocate sufficient time, materials, and equipment to safely complete assigned tasks. In particular, each subcontractor is responsible for equipping its personnel with any required PPE.

Resolution Consultants' SSHO will be responsible for ensuring subcontractor compliance with the APP/SSHP. Specific responsibilities of subcontractor employees include:

- Compliance with the requirements of their Scope of Work
- Participate in development of a SSHP with AHAs for their work activities
- Maintain a safe and healthy work environment;
- Compliance with the APP, contract requirements, laws, regulations, and Engineering Manual (EM) 385-1-1
- Review the APP to ensure that the health and safety requirements of their specific tasks are satisfied
- Provide trained and experienced workers for the specific work activities
- Participate in the Daily Safety Tailgate Meetings
- Identify additional training needs for unique tasks
- Enforce company- and project-specific rules and procedures during work activities

- Report all incidents and participate in the investigations
- Participate in routine site inspection activities
- Ensure all equipment brought to the site is in proper working order, is routinely inspected and maintained in safe working order

5.c. Suppliers

All suppliers of safety-related items are required to provide approved and/or appropriate materials for the project, and meet applicable specifications, testing criteria or third party certifications. These items will be inspected upon receipt by the SSHO.

Each hazardous material supplied for site use will be accompanied by a Material Safety Data Sheet (MSDS) and will be added to the site list of hazardous materials. MSDSs and the list will be maintained by the SSHO.

6. TRAINING

6.a. New Hire Safety Orientation Training

Employees will be provided with safety and health orientation prior to the start of work. All orientation training will be documented in writing by data, name, content, and trainer. The training will, at a minimum, include:

- Requirements and responsibilities for accident prevention and the maintenance of safe and healthful work environments
- General safety and health policies and procedures and pertinent provisions of EM 385-1-1
- Employee and supervisor responsibilities for reporting all accidents
- Provisions for medical facilities and emergency response and procedures for obtaining medical treatment or emergency assistance
- Procedures for reporting and correcting unsafe conditions or practices
- Job hazards and the means to control/eliminate those hazards, including applicable AHAs.

6.b. Mandatory Training and Certifications

Personnel who participate in field activities associated with this project must be qualified Hazardous Waste Operations and Emergency Response (HAZWOPER) workers (unless otherwise noted in specific AHA or by the SSHO), and must meet the training and medical monitoring requirements. Personnel must have successfully completed training, meeting the provisions established in 29 CFR 1910.120 for 40-hour training and 8-hour annual refresher training. Additionally, onsite management and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations shall receive at least eight additional hours of specialized hazardous waste operations management training. Appendix F contains project personnel HAZWOPER training and medical monitoring documentation.

Medical Monitoring

Resolution Consultants personnel performing onsite work that may result in exposure to contaminant-related health and safety hazards are enrolled in the medical surveillance program that complies with OSHA standard 29 CFR 1910.120 (f)/29 CFR 1926.62 (f).

They will have successfully completed a pre-placement occupational physical examination and annually thereafter. The medical surveillance program meets the following requirements:

- **The physician's opinion concerning the employees' abilities to perform the assigned work** shall be provided to the SH&E Manager or designated company HR representative
- The required **written physician's opinion shall be made available upon request**
- All medical records are maintained in accordance with 29 CFR 1910.1020
- Examinations are given at least once every 12 months unless the attending physician believes a longer interval (not greater than biennially) is appropriate
- Examinations are administered by a licensed physician who is certified by the American Board of Preventive Medicine.

Medical examinations must meet the requirements specified by the licensed physician. The physician takes into account site-specific contaminant issues during the examinations. This examination has been designed to meet the requirements of 29 CFR 1910.120 (f) requirements for hazardous waste site operations. The employee will be informed of any medical conditions that would result in work restriction or that would prevent them from working at hazardous waste sites.

Resolution Consultants will certify that all employees have successfully completed a physical examination by a qualified occupational health physician and will supply certification of medical clearance for each onsite employee. Certification of medical surveillance program participation is provided as Appendix F. The certifications include employee name, date of last examination, and name of examining physician.

6.c. Procedures for Periodic Safety and Health Training

The SSHO will maintain training/certification records onsite for all personnel as well as track training expiration dates. Prior to expiration, the SSHO will coordinate training of all site personnel with the PM to maintain valid training/certification requirements.

6.d. Emergency Response Training

Resolution Consultants will provide training in the handling of emergency situations that may arise from project activities or equipment operation. Prior to commencement of project activities, all site personnel will be trained on the posted emergency telephone numbers, location and use of spill kit materials, directions to the hospital, location and use of fire extinguishers, location of first aid kits, and the persons who are certified in first aid and CPR. Additional details on applicable emergency response training and procedures are provided in Section 9.2, Emergency Response Plans.



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7. SAFETY AND HEALTH INSPECTIONS

7.a. Daily Job Site Safety and Health Inspection

The SSHO will conduct daily jobsite health and safety inspections/audits to identify new or previously unidentified hazards, verify the effectiveness of hazard control measures, observe workers performing tasks, and provide feedback to workers. Deficiencies noted during the daily inspection will be corrected immediately, or work will be stopped in the affected area until the deficiency is corrected. The daily jobsite health and safety inspection will be documented in the SSHO logbook.

Safety and health issues and deficiencies identified during the “weekly” level inspections, and the actions, timetable, and responsibility for correcting the deficiencies, will be recorded on an inspection form. Follow-up inspections to ensure correction of any identified deficiencies will also be conducted and documented on an inspection form.

Resolution Consultants will establish a safety and occupational health deficiency tracking log that lists and monitors the status of safety and health deficiencies in chronological order. The log will be available, be updated daily, and will provide the following information:

- Data of deficiency
- Description of deficiency
- Name of person responsible for correcting deficiency
- Projected resolution date
- Date actually resolved

Table 7-1 lists the safety and health inspection requirements for field operations at CNC — Building 13.

Table 7-1 Safety and Health Inspection Requirements			
What	Who	When	Documentation
General Site Conditions	SSHO	Daily	Log Book
	SSHO	Weekly	Safety Inspection Form
	Project Manager	Monthly	Safety Inspection Form
	SH&E Manager	Quarterly	Safety Inspection Form
Tools and Equipment	Users	Daily	Tag and Remove Defective Items from Service
Personal Protective Equipment	Users	Upon issue and daily thereafter	Reported to SSHO for log book entry

7.b. External Inspections and Certifications

External inspections are not expected for this project. In the event that an OSHA or other regulatory agency inspection, Resolution Consultants will immediately notify and provide NAVFAC the opportunity to accompany Resolution Consultants on the inspection. Resolution Consultants will provide NAVFAC a copy of any citations or reports issued by the inspector and any corrective action responses to the citation(s) or report(s).

8. ACCIDENT REPORTING

All accidents and incidents that occur onsite during any field activity will be promptly reported to the SSHO and the immediate supervisor in accordance with SH&E SOP 05-004-*Incident Reporting*. If any Resolution Consultants employee is injured and requires medical treatment, the Site Supervisor will contact the **SH&E Manager and the PM immediately**. The Site Supervisor will initiate a written report, using the ***Supervisor's Report of Incident*** form (or equivalent). The report will then be provided to the Regional SH&E Manager before the end of the following shift.

If any employee of a subcontractor is injured, documentation of the incident will be accomplished in **accordance with the subcontractor's procedures; however, copies of all documentation (which at a minimum must include the OSHA Form 301 or equivalent) must be provided to the SSHO within 24 hours after the accident has occurred.**

All accidents/incidents will be investigated in accordance with SH&E SOP 05-603-*Incident Investigation and Review*. Copies of all subcontractor accident investigations, whether accomplished in accordance with their own procedures or SH&E SOP 05-004-*Incident Reporting*, will be provided to the SSHO within five (5) days of the accident/incident.

All personnel at the work site shall use the buddy system, staying within sight of their partner. If a partner becomes incapacitated or severely ill, an ambulance will be called. In the event that a cessation of work is ordered, all personnel should:

- Assist the SSHO and/or Site Supervisor, if required, in decontaminating the victim and/or administering first aid
- Leave the contaminated area and undergo decontamination prior to entering the worker rest area
- Assist emergency response personnel when requested

All workers receiving medical treatment by a physician will obtain a release from the physician on the date of treatment stating one of the following: (1) the employee is not fit for duty, (2) the employee is fit for restricted duty, or (3) the employee is fit for duty.

8.a. Exposure Data

Resolution Consultants will maintain records of all exposure and accident experience incidental to the project work including Resolution Consultants personnel and subcontractors. These records will include exposure work hours and a log of occupational injuries and illnesses (OSHA Form 300 or equivalent).

8.b. Accident Investigations, Reports, and Logs

NAVFAC requires that all injuries be reported as soon as reasonably possible, but no later than 24 hours. Notification of accidents, injuries, and illnesses will be evaluated and reported in accordance with applicable NAVFAC requirements. The SH&E Manager will report the incident to NAVFAC by completing a Contractor Significant Incident Report. The SH&E Manager will review all documentation associated with the incident, and will assist in the performance of any necessary accident investigation or other follow-up. The PM will ensure that the recommendations resulting from any investigation are implemented without delay.

Daily records of all first aid treatments not otherwise reportable will be recorded on a first aid treatment form and furnished to NAVFAC upon request.

8.c. Immediate Accident Notification

An accident that has, or appears to have, any of the consequences listed below will be immediately reported by Resolution Consultants to NAVFAC. The following accidents will be investigated in depth to identify all causes and to recommend hazard control measures:

- A fatal injury/illness
- A permanent totally disabling injury/illness
- A permanent partial disabling injury/illness
- The hospitalization of three or more people as inpatients resulting from a single occurrence
- Accidental property damage of \$200,000 or more

Resolution Consultants will also notify OSHA when three or more employees are hospitalized or if a fatality occurs relating to work activities.

9. PLANS (PROGRAMS, PROCEDURES) REQUIRED BY THE SAFETY MANUAL

Based on the scope of site investigation activities, all applicable safety plans, programs, and procedures to address risk and compliance requirements were identified and are described below.

9.a. Layout Plans

This section is not applicable to the tasks being performed for this project.

9.b. Emergency Response Plans

The Resolution Consultants site team will hold an emergency response plan meeting during mobilization and prior to fieldwork to discuss and define the following:

- Personnel roles and line of authority
- Safe distances from emergency location
- Evacuation/Hospital route, procedures, and pre-determined meeting place
- Medical emergency and communication procedures
- Emergency alert and response procedures
- Emergency equipment and location onsite

The Emergency Response Plan (ERP) will be discussed during initial site training and discussed regularly during the Daily Tailgate Safety Meetings. Annually, or as needed, the SSHO and the PM will review the ERP and make any changes necessary to keep the ERP current with new or changing site conditions and information. The SSHO will conduct drills monthly or more frequently if conditions change to evaluate the response and testing the effectiveness of the ERP. Conditions that may lead to an emergency situation during field activities will be addressed in specific AHAs as tasks are identified. These conditions include:

- Fire
- Vehicle collisions or rollovers
- Environmental release

- Severe weather
- Medical emergency due to heat/cold stress, physical/physiological incident, allergic reactions

9.b.(1) Procedures and Tests

In accordance with the above, a test drill will be conducted on an as need basis to evaluate the effectiveness of the ERP and to ensure all employees onsite are adequately accounted for. The drills will consist of mock simulations of differing events requiring emergency response and will be applicable to the type of work being conducted on the site.

Drills will consist of responding to a medical emergency, striking utility lines, environmental releases (i.e., spills), fires, and other typical onsite emergencies as determined applicable to the SSHO. Using the protocols outlined in the subsections below, personnel will be required to perform emergency shutdown operations of equipment/tasks, follow proper evacuation and emergency procedures, and assemble at the pre-determined safe places of refuge where the SSHO will take head-counts of onsite personnel using the Site Control log for the project site. Based on the parameters established for the drill (e.g., medical emergency versus spill response), the list of contact numbers for the appropriate local and company specific emergency notifications will be reviewed with all site personnel as a part of the drill.

A post-drill analysis will be performed by the SSHO to analyze the response actions of site personnel and determine their effectiveness (evacuation times, routes, muster points, accountability, contacts, etc.). If any deficiencies are noted, adjustments to the ERP will be made by the SSHO and site personnel re-trained on the appropriate course of action for the type of emergency.

The SSHO will be responsible for the overall direction and implementation of the ERP, and for overall coordination of any emergency response actions. Specific ERP responsibilities of the SSHO include, but are not limited to, the following:

- Notifying facility police, fire department, and other offsite emergency units, as required
- Notifying the PM and providing updates as conditions change
- Directing offsite emergency response personnel to the scene and providing assistance

- Site control
- Completing any follow-up reports
- Rescuing personnel
- Accounting for all site personnel and visitors
- Providing emergency first aid
- Preventing further injury of personnel
- Providing current status of the incident to the SH&E Manager
- Ensuring that onsite emergency response personnel don the proper PPE if needed
- Assisting onsite emergency response personnel with treatment and transport of sick/injured
- Providing medical background information of the sick/injured and applicable site health and safety information to the offsite emergency medical responders
- Accompanying sick/injured personnel to hospital
- Accounting for all site personnel using the Site Control Log (Sign-in Log)

Resolution Consultants personnel, subcontractors, and visitors will be responsible for:

- Reporting any site emergencies to the SSHO or Site Supervisor
- Knowing the exit location and evacuation route(s) within the exclusion zone
- Knowing the pre-planned evacuation assembly point and going there in the event of an emergency
- Assisting emergency response personnel as requested

Emergency Recognition and Prevention

An emergency is an unplanned event that threatens the safety of site personnel. Compliance with this APP can assist in the prevention of anticipated site emergencies. These emergency situations can easily be recognized by visual observations, worker complaints, safety audits, and/or monitoring instruments.

Safe Distances and Places of Refuge

The SSHO will determine safe distances and places of refuge. Prior to the start of each workday, the SSHO will hold a safety meeting with all personnel and discuss the following, as applicable:

- Evacuation routes from work areas
- The assembly point (both primary and secondary) to be used in the event of an emergency
- Locations of the nearest fire extinguishers and spill containment equipment
- Discussion on specific safety and health concerns of personnel

Evacuation Procedures

The SSHO will establish site evacuation routes. Evacuation notification will be three long blasts on an air horn, vehicle horn, or direct verbal communication. If evacuation is necessary, all personnel are to:

- Gather equipment to the extent safely possible
- Evacuate to the vehicle(s) location, and prepare to move out

Emergency Procedures

Upon discovering an emergency, the following series of events will occur:

- Notify personnel
- Establish communication
- Stop work activities, if necessary

- Lower background noises (shut down equipment)
- Begin emergency procedures (order is dependent on the situation)
- Survey casualties
- Assess “Airway, Breathing, Circulation” of each patient
- Request aid, if necessary
- Assess existing and potential hazards to site personnel and offsite populations
- Allocate resources
- If a certified Emergency Medical Technician is in attendance, help extricate and stabilize victims
- Evacuate all non-essential personnel

Alerting and Communications

An employee alarm system will consist of the use of air horns or verbal instructions, either directly or via radio. Air horn signals, (and hand signals if necessary) will be established and employees will be trained in the signals and appropriate response. Telephones will be used to contact offsite emergency responders. Contact lists included in the SSHP will be posted in the site offices, and a copy will be kept in site vehicles. The following information will be communicated:

- Name of the person reporting the emergency
- Telephone number at the location of the person making the call
- Name of the injured person, if known
- Description of the emergency
- Exact location of the emergency

- Actions already taken
- Assistance required

Coordination with Local Emergency Agencies

Local or base authorities and emergency services will be contacted prior to initiation of work. The work objectives and onsite capabilities will be explained, as well as the most likely emergencies.

Preferred contact procedures will be established and the response capabilities of local or base responders will be determined. Resolution Consultants will ensure there is good coordination between our emergency plan and base requirements. Contact agencies, points of contact, and phone numbers will be provided in the SSHP.

Emergency Response Team

During emergency response operations, safety and health requirements put in place to protect site workers must be maintained. The SSHO will be alerted of the accident or incident that happened, which requires the Emergency Response Team (ERT) response and/or recovery operations.

Response to hazardous substances release will be limited to immediate action available due to equipment and training, (i.e., oil or fuel spills of small quantities). Responding facility emergency response personnel have authority for the site upon arrival. Project ERT personnel will assist local facility emergency response personnel, as needed.

The project ERT will notify base emergency response personnel, project personnel, and NAVFAC in the event of a hazardous substance release. Team response is limited to the confining or recovery of small spills using a spill containment kit, shovel, and approved container with lid. Training of personnel is in accordance with 29 CFR 1910.120(q)(6)(ii).

A first aid kit must be maintained on site and checked weekly (EM 385-1-1 section 03.B.02). A log of items used will be maintained.

Project personnel will rely on base emergency response personnel through the use of the 911 emergency notification system and/or base emergency notification system.

If an injury or illness requires more than first aid, but is not an emergency, the employee will be taken to a pre-determined clinic for examination or observation. If the injury or illness is considered an emergency, emergency services will be contacted to transport the victim to the local hospital or emergency care facility.

9.b.(2) Spill Plans

Potential hazardous spills control measures:

- Provide for secondary containment where required by regulation or contract, and where a spill could result in significant hazard or economic loss
- Provide other appropriate engineering controls to prevent environmental releases to the ground, water, or air. These will be identified in AHAs or environmental permits (or equivalent)
- Provide equipment and personnel to perform emergency measures to mitigate spills and control their spread
- Dispose of contaminated materials
- Provide a decontamination program to clean previously uncontaminated areas.

Spill Contingency Plan

In the event of a spill or release, Resolution Consultants will:

- Take immediate measures to control and contain the release, including contacting local emergency service providers, if necessary
- Isolate and contain hazardous release areas
- Deny entry to the spill area to unauthorized personnel
- Stay upwind, keep out of low areas
- Keep combustible materials away from the spilled material

- Collect samples for analysis to determine that cleanup is adequate
- If liquid, prevent the discharge from traveling beyond site boundaries
- Prevent spilled materials from reaching storm water receptacle, ditches, creeks and drainage canals
- Take caution when handling drums and containers
- Notify base and NAVFAC

Notification of Spills and Discharges

All environmental spills or releases of hazardous materials (e.g., fuels, solvents, etc.), whether in excess of the Reportable Quantity or not, will be reported according to the sequence identified for the site.

Resolution Consultants will notify base and NAVFAC immediately of any spill or discharge. Resolution Consultants will make all regulatory notifications for Resolution Consultants generate spills.

In determining whether a spill or release must be reported to a regulatory agency, the Site Supervisor will assess the quantity of the spill or release and evaluate the reporting criteria against the state-specific reporting requirements, the applicable regulatory permit, and/or client-specific reporting procedures. **If reporting to a state or federal regulatory agency is required, Resolution Consultants has 15 minutes from the time of the spill/release to officially report it.**

9.b.(3) Fire Fighting Plan

In any fire situation, it is important to act quickly and decisively in order to contain the spread of the fire. Regardless of the size and nature of the fire, and Resolution Consultants' ability to respond, all fires will be reported immediately to the local fire department. The SSHO will:

- Sound the fire alarm (local or auxiliary);
- Determine the extent of the fire;

- Notify Fire Department — 911 (Fire Department is to be notified of any fires larger in size than a wastebasket); Provide the following information:
 - Name of Facility
 - Address, including nearest cross street(s)
 - Exact location of the fire within the site
 - Provide name and phone number
- Coordinate and manage fire suppression efforts until the additional personnel arrive
- Coordinate the evacuation of injured or non-essential personnel from the site upwind following the evacuation procedure
- Check attendance
- Provide emergency first aid as required
- If the SSHO has determined that it is safe to do so, site personnel may use available onsite fire extinguishers on incipient stage fires only
- Remove or isolate flammable or other hazardous materials, which may contribute to the fire
- Clear access routes for emergency vehicles

Fire Department officials will determine when it is safe for re-entry.

Documentation and Review

After the response, Resolution Consultants will prepare an Incident Report. It will include such things as a chronological history of the emergency, facts, action, personnel present, sample results (if collected), summary of injuries, and possible exposures. For spills and releases, it will also include:

- Description of material spilled, including identity, quantity, and a copy of the waste disposal manifest
 - Exact time and location of the spill and the description of the area involved
-

- Containment procedures utilized
- Description of the cleanup procedure employed at the site, including disposal of spill residue
- Summary of the communications Resolution Consultants had with other agencies

This report will be given to NAVFAC within two (2) days of the incident along with immediate verbal notification. The report will also contain a critique of the response and modifications to this APP will be made if necessary to adequately address subsequent emergencies.

9.b.(4) Posting of Emergency Telephone Numbers

Emergency phone numbers, call signs, and detailed instruction for obtaining emergency response and medical assistance will be posted on the safety bulletin board (maintained in site vehicle), and provided to the SSHO. All personnel will be trained on the emergency alert systems in place at the work site. The emergency contacts for the project can be found in Section H.14.5, Table H-8 of the SSHP. This includes a detailed hospital route map with approximate times and distances.

Safety and Health Information

The Resolution Consultants SSHO will have the appropriate safety and health information available in an area commonly accessed by workers. The information will be maintained current, readily available to affected workers, and protected against the elements and unauthorized removal.

Required postings and general safety awareness reminder posters will be used to communicate information to site participants. The required postings will include copies of the current:

- APP
- AHAs
- OSHA Form 300 (if injury has occurred)
- Safety and Health promotional posters
- Date of last lost workday injury (if injury has occurred)
- OSHA Safety and Health Poster
- A highly visible map showing the route to the nearest emergency room
- Emergency contact numbers

Each office/project site where Resolution Consultants has established a presence will have the appropriate labor posters. Ensure local and state posting are included. At a minimum, ensure OSHA's Occupational Safety Health and Act Poster (OSHA 3165) is available onsite and communicated to all affected employees. It is anticipated that all postings will be maintained in the site vehicle in the absence of a dedicated site office.

9.b.(5) Man Overboard/Abandon Ship

This section is not applicable to the tasks being performed for this project.

9.b.(6) Medical Support

Onsite medical support during project execution will be available from two or more individuals who are trained in First Aid and CPR and blood borne pathogens. A list of individuals and dates of First Aid and CPR training is depicted in the table below and copies of the certifications provided in Appendix G. Onsite first aid kits will meet the requirements of EM 385-1-1. First aid kits are Type III, 16 unit kits, including one pocket mouthpiece or CPR barrier. Kits will be checked prior to use, and at least weekly when work is in progress to ensure that contents are replaced as used. If a unit is available, personnel will be trained in the use of the Automated External Defibrillator.

Resolution Consultants Personnel	First Aid (Date of Completion)	CPR (Date of Completion)
James Watson	Nov 2011	Nov 2011

Emergency medical support contact information is contained in the SSHP. Employees can contact emergency personnel by dialing 911. The dispatcher will contact, fire, and/or helicopter evacuation services. The emergency reference sheet attached to the SSHP provides the numbers of the nearest medical center and Resolution Consultants safety personnel. Emergency phone numbers can be found in the SSHP for all jobsites.

9.c. Plan for Prevention of Alcohol and Drug Abuse

Resolution Consultants is committed to providing a safe and healthy workplace for all employees. Consistent with this commitment and in keeping with the federal Drug-Free Workplace Act of 1988, it is the policy of Resolution Consultants to maintain a drug-free workplace.

Key Provisions

Resolution Consultants policy prohibits employees from being under the influence of alcohol or drugs or improperly using medication in any way that could diminish, or raise questions concerning, **an employee's ability to perform at his or her best while performing services** for or on behalf of Resolution Consultants. While on duty, employees will not use or be under the influence of alcohol, narcotics, intoxicants, or similar mind-altering substances.

This policy also prohibits the sale, possession, manufacturing, and/or distribution of illegal drugs, and/or other controlled substances in the workplace or while on company business off premises. Compliance with this policy is considered a condition of employment.

Violations of this policy will be considered to be gross and willful misconduct and will result in disciplinary action, up to and including termination. Any illegal substances discovered in the workplace will be turned over to the appropriate law enforcement agency and may result in criminal prosecution.

Employee Responsibilities

When a worker is impaired by the use of drugs or alcohol, he or she threatens the safety and well-being of everyone at a worksite. As a Resolution Consultants employee, you must do the following to protect workplace safety:

- Understand Resolution Consultants' drug-free workplace policy
- Follow it and set a good example for others by working drug and alcohol free
- Seek help if you or your co-worker(s) need it
- Notify management if you observe use of or impairment from drugs or alcohol that could threaten the health and safety of co-workers

Confidential help is available, at no cost to employees. If you and/or a co-worker are struggling with drug or alcohol problems, turn to services such as:

- Those provided through the Resolution Consultants sponsoring employer HR department.

- The ***Substance Abuse Treatment Locator:*** (800) 662-HELP or www.findtreatment.samhsa.gov.

If an employee observes drug-free workplace policy violations or obvious, on-the-job impairment you believe poses an immediate danger to any worker on the job:

- DO NOT DELAY or ignore the situation
- ACT to prevent the worker from committing the unsafe practice, if at all possible
- NOTIFY your supervisor (and/or SSHO) *immediately*

Supervisors Responsibilities

When a worker is impaired by the use of drugs or alcohol, he or she threatens the safety and well-being of everyone at a worksite. While it is the responsibility of every employee to work drug free, supervisors can be the first line of defense by taking appropriate action when a worker may be impaired.

Supervisors must familiarize themselves with Resolution Consultants' drug-free workplace policy and be able to explain it to others. In addition, you must ensure that your workers understand their responsibility to:

- Know the Resolution Consultants drug-free workplace policy
- Follow it and set a good example for others
- Seek help if they or their co-workers need it
- Notify you/management if they observe drug or alcohol use or impairment that threatens safety

Supervisors can play a powerful role in improving workplace safety by intervening and encouraging workers with alcohol or drug problems to seek help. Both on and off the job, symptoms of alcohol or drug use may be **physical** (chills, smell of alcohol, sweating, weight loss, physical deterioration); **emotional** (increased aggression, anxiety, burnout, denial, depression, paranoia); and/or **behavioral** (excessive talking, impaired coordination, irritability, lack of energy, limited attention span, poor motivation).

While different types of drugs produce different physical symptoms or behaviors, there are numerous ways that misuse affects work behavior — and ultimately job performance and safety. It could be a sign of a drug or alcohol problem if a worker is:

- Arriving late, leaving early, and/or often absent
- Unreliable and often away from assigned job
- Careless and repeatedly making mistakes
- Argumentative and uncooperative
- Unwilling or unable to follow directions
- Avoiding responsibilities
- Making excuses that are unbelievable or placing blame elsewhere
- Taking unnecessary risks by ignoring safety and health procedures
- Frequently involved in mishaps and accidents or responsible for damage to equipment or property

Supervisors are not expected to perform the role of police officer or counselor. Since part of the supervisors job is to assess employees' job performance to ensure that all necessary tasks are completed in accordance with specifications and deadlines, supervisors primary role in enforcing the policy is to be observant. When an employee begins to show a consistent pattern of problem behavior, supervisors should take action. Focusing on job performance, even when the problem may be caused by drugs or alcohol, allows the supervisor to balance both the rights of the individual employee to privacy and fair treatment and the rights of the work group to a safe, secure and productive environment.

Do not wait until someone gets hurt to address a worker's drug or alcohol misuse. If you suspect a worker has a problem, follow company guidelines, which include these steps:

- Start documenting evidence of declining job performance
-

- List specific incidents (include date and time) and be concrete about what job functions/responsibilities were affected
- Share this documentation with the appropriate company official who is qualified to advise you on how to handle the situation (human resources manager)
- Meet with the employee and tell him/her that you are concerned about his/her job performance. Describe specific incidents and problems using your documentation as a guide
- Ask the employee if he/she has any explanation for the problem. Offer the opportunity to make the connection between alcohol/drug use and performance, but don't accuse the employee **unless you have "reasonable suspicion"** and are going to require a drug test
- Define what must be done to correct the performance problem and specify the consequences for the employee if the problem is not corrected
- Refer the employee for professional assistance if he/she has admitted that drug or alcohol use is the root cause of the performance problem. Even if the employee has not admitted he/she has a problem, reconfirm your concern and suggest he/she seek assistance since personal problems-including, but not limited to, alcohol and drug use — are often the root causes of these types of job performance issues
- Set a timeframe for improvement and be willing and able to follow through on your promises about consequences

When a worker has a problem with alcohol or drugs, Resolution Consultants employee assistance programs provided through Resolution Consultants sponsoring employer healthcare benefits are generally the best places to turn for help since they are confidential. Some additional free and confidential resources include:

- **Substance Abuse Treatment Locator**
1-800-662-HELP
www.findtreatment.samhsa.gov

- **Alcoholics Anonymous (AA)**
(212) 870-3400
www.aa.org
- **Narcotics Anonymous**
(818) 773-9999
www.na.org
- **Al-Anon**
1-888-4AL-ANON
www.al-anon.alateen.org
- **National Council on Alcoholism and Drug Dependence Hopeline**
1-800-NCA-CALL
www.ncadd.org

Testing for Drugs and Alcohol

Employees who are under the influence of alcohol or any controlled substance have the potential for interfering with their own and their coworkers' safe and efficient job performance. Drug and/or alcohol screening may be required:

- Of any applicant to whom a job offer has been made
- Of any employee where there is reason to believe that he or she may be using illegal or non-prescribed drugs or may be under the influence of drugs and alcohol. **"Reason to believe" includes an injury or accident at work** where there is reason to believe that employee impairment may have been a factor. **"Reason to believe" may be based on objective symptoms such as the employee's appearance, behavior or speech**
- As part of occasional follow-up testing if the employee is found to have breached these policies but has been permitted to remain employed
- As required by client contract, project, or if an employee is employed in a safety-sensitive position. Under these limited circumstances, employees may also be subjected to pre-employment and random drug screening

An employee's cooperation with such drug or alcohol screening tests is required as a condition of employment. **The employee's refusal to cooperate with such a request and to provide a specimen** may result in termination where there is reason to believe that the employee has violated this **policy and the employee's refusal to cooperate has prevented a medical determination of his or her** condition. Any violation of this policy may result in immediate termination.

Employees found to be under the influence of or consuming such substances will be immediately removed from the job site. Contractors shall enforce the drug-free workplace requirements.

Any employee under a physician's treatment and taking prescribed narcotics or any medication that may prevent one being ready, willing, and able to safely perform position duties, shall provide a medical clearance statement to his/her supervisor.

9.d. Site Sanitation Plan

Smoking, Eating, and Drinking

Eating and drinking will be permitted only in designated areas at Resolution Consultants project sites. Smoking will be permitted only in areas designated by SSHO and situated in locations that are not in the immediate vicinity of activities associated with work site activities. Additionally, the SSHO will designate each smoking area giving primary consideration to those personnel who do not smoke.

Personnel actively involved in the performance of certain activities will not be permitted to smoke, eat, drink, or use smokeless tobacco, except during breaks (e.g., HAZWOPER Controlled work areas).

Water Supply

Water supplies will be available for use onsite and will comply with the following requirements.

Potable Water

Drinking Water: An adequate supply of cool water will be supplied and will be kept in water coolers in the support zone onsite. The water cooler will be kept closed and appropriately sealed to protect the drinking water integrity. Personnel will be instructed to wash their face and hands prior to drinking.

Potable water can be provided in the form of approved well or city water, bottled, or drinking fountains. Where drinking fountains are not available, individual use cups will be provided as well as adequate disposal containers. Potable water containers will be properly identified in order to distinguish them from non-potable water sources.

Non-Potable Water

Non-potable water maintained at the project site and all outlets dispensing non-potable water **should have posted the following: "CAUTION – WATER UNSAFE FOR DRINKING, WASHING, OR COOKING."** Non-potable water may be used for hand washing and cleaning activities. Non-potable water will not be used for drinking purposes. All containers/supplies of non-potable water used will be properly identified/labeled as such.

Toilet Facilities

Chemical toilet(s) will be available for site personnel and visitors. A minimum of one toilet will be provided for every 20-site personnel, with separate toilets maintained for each sex, except where there are less than five total personnel onsite. The toilet will be equipped with toilet paper, toilet paper holder, locking door, and adequate ventilation.

For mobile crews where work activities and locations permit transportation to nearby toilet facilities (e.g., gas station, or rest stop), onsite facilities are not required.

Washing Facilities

Site personnel will wash hands and face after completing work activities and prior to breaks, lunch, or completion of workday.

Personal Cleaning Supplies

Cleaning supplies at project sites will consist of soap, water, and disposable paper towels or items of equal use/application (e.g., anti-bacterial gels, wipes, etc.).

Clothing and PPE

All PPE will be kept clean at all times and maintained in accordance with the manufacturer's requirements.

Sanitation

General Work Areas

At all times, work areas will be kept free of dirt and debris that may impact the safety of site personnel and visitors. All trash receptacles will be regularly emptied.

Break Areas and Lunchrooms

Site personnel will observe the following requirements when using break areas and lunchrooms at project sites:

- All food and drink items will be properly stored when not in use
- Food items will not be stored in personal lockers for extended periods in order to prevent the potential for vermin infestation
- Perishable foods will be refrigerated whenever possible
- All waste food containers will be discarded in trash receptacles
- All tables, chairs, counters, sinks, and similar surfaces will be kept clean and free of dirt, waste food, and food containers at all times
- Refrigerators used to store food items will be maintained at 45 degrees Fahrenheit and emptied of all unclaimed food items weekly
- Routine cleaning of refrigerators will also be performed on a regular basis

Housekeeping

- All work areas shall be kept clean to the extent that the nature of the work allows;
- Every work area shall be maintained, so far as practicable, in a dry condition; where wet processes are used, drainage shall be maintained and platforms, mats, or other dry standing places shall be provided, where practicable, or appropriate waterproof footwear shall be provided;

- Protruding objects or placement of materials on paths or foot traffic areas present a problem with regard to slips, trips, falls, and puncture wounds. Personnel will use a reasonable amount of effort to keep slip, trip, and fall hazards to a minimum;
- Excess debris and trash will be collected and stored in an appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal; and
- At no time will debris or trash be intermingled with waste PPE or contaminated materials.

9.e. Access and Haul Road Plan

This section is not applicable to the tasks being performed for this project.

9.f. Respiratory Protection Program

A Respiratory Protection Plan (05.G.03) is not applicable to the project. If any conditions that require potential upgrade in PPE, to include the use of Level C PPE, are noted during the course of site activities, all work operations will cease at the location and the PM and SH&E Manager will be notified immediately. A modification to Resolution Consultants' **APP and SSHP** will be required prior to conducting work in Level C PPE or higher.

9.g. Health Hazard Control Program

All operations, materials, and equipment associated with this project will be evaluated/assessed to determine the presence of hazardous environments or if hazardous or toxic agents could be released into the work environment. Additional hazard assessment will be conducted if a change in conditions occurs.

The AHA procedures will be used to identify all substances, agents, and environments that present a hazard and recommend hazard control measures. Engineering and administrative controls will be used to control hazard and in cases where engineering or administrative controls are not feasible, PPE use will be mandated. These controls are detailed in the AHAs applicable to the project site and have been included in Attachment 3 of the SSHP.

The analyses will identify the workplace and activity evaluated; the name of the person certifying that the evaluation has been performed; and the date of the evaluation.

Operations, materials, and equipment involving potential exposure to hazardous or toxic agents or environments shall be evaluated by an Resolution Consultants certified industrial hygienist (CIH), certified safety professional (CSP), or other competent person. Exposure, through inhalation, ingestion, skin absorption, or physical contact, to any chemical, biological, or physical agent in excess of the acceptable limits specified in the most recently published American Conference of Governmental Industrial Hygienists (ACGIH) guideline, "*Threshold Limit Values and Biological Exposure Indices*," or by OSHA, whichever is more stringent, shall be prohibited.

Identification of Principal Hazards

The following are the principal hazards that can be anticipated while conducting field investigations:

- Chemical hazards
- Biological hazards
- Physical hazards

Hazard/Risk Management

Resolution Consultants has adopted and implemented the composite risk management process, which includes the following steps:

- Identification of the hazard
- Assessment of the hazard
- Development of controls and risk decision
- Implementation of controls
- Supervision and evaluation during task performance

Hazard Identification

A concise statement is prepared identifying the conditions that reflect actual or potential conditions that can cause injury, illness, or death of personnel, damage to the environment, damage or loss of equipment, or degradation of the production goals.

Exposure Control

The following methods will be utilized for the control of exposure to hazardous or toxic agents and environments:

- Substitution, if the substitute process or product is determined to provide the same outcome and to be less of a hazard
- Engineering controls (such as local/general ventilation), to limit exposure to hazardous or toxic agents and environments within acceptable limits
- Work practice controls, when engineering controls are not feasible or are not sufficient to limit exposure to hazardous or toxic agents and environments within acceptable limits
- Appropriate PPE (i.e., respirators, gloves, etc.) and associated programs shall be instituted when engineering, work practice controls or material substitution are not feasible or are not sufficient to limit exposure to hazardous or toxic agents

Personal Protective Equipment

The purpose of PPE and clothing is to protect individuals from chemical and physical hazards. Specific work tasks with unique hazards and/or PPE requirements will be evaluated or reevaluated prior to beginning work. This task review will be led by the SSHO, and will include knowledgeable individuals such as the worker(s) and the supervisor. PPE requirements, based on this assessment are found in the SSHP and in the AHA for the specific task. All workers must be trained in the requirements of the APP, SSHP, and the applicable AHAs prior to beginning work.

Requirements for task and activity-specific levels of protective clothing are presented on the AHAs. Personnel performing site tasks shall use the appropriate level and type of PPE specified in this APP for each individual task. This APP makes provisions for use of the following levels of PPE, in accordance with the hazards and contamination level anticipated for each task or operation:

- Level D PPE: Applicable to all phases of work
- Modified Level D PPE: Applicable to work activities involving exposure potential to biological hazards such as poisonous plants (poison Ivy/Oak) and/or insects (ticks)

Level D Protection

Level D protection is the minimum protection required for project personnel and visitors at the site. Level D protection may be sufficient when no contaminants are present or work operations preclude splashes, immersion, or the potential for unexpected inhalation or contact with hazardous levels of chemicals.

The following equipment will be used for Level D protection:

- Coveralls or other suitable fieldwork clothing
- Persons exposed to vehicular or equipment traffic, including signalpersons, spotters, or inspectors, shall wear high visibility apparel meeting American National Standards Institute/Safety Equipment Association (ANSI/SEA) 107 Class 3 requirements
- Work boots with either steel or composite safety toe meeting the ANSI Z41 standard
- Safety glasses or goggles as needed
- Hardhat if overhead hazard or heavy equipment is encountered or operated
- Leather work gloves
- Hearing protection, earplugs, and/or earmuffs as needed
- Raingear and Rubber Boots (if required)

Should personnel encounter an unusual odor, discolored soil, or an unknown item, they will immediately notify their supervisor and will evacuate the site upwind of the suspected item. The SSHO will notify the PM of the actions taken.

Modified Level D protection will incorporate all of the above with the addition of chemical protective gloves (nitrile), tyvek coveralls, and rubber over booties for biological hazard avoidance if necessary.

Proper PPE Selection

The selection of the PPE will be done after a thorough evaluation of the hazards involved at the site during each phase of the operation. All persons entering the site area will put on the required PPE according to established procedures in this APP.

Hazard and risk assessment is a continuing process to be conducted by the SSHO, throughout the duration of the project. Changes in specific PPE or levels of PPE may be required in accordance with information obtained from implementation of site activities and data derived from the other sources. As a general rule, levels of PPE will need to be reassessed if any of the following occur:

- Appearance of previously unidentified or anticipated chemicals, conditions, or task hazards
- Airborne concentrations of known chemicals exceed action levels
- Ambient weather conditions changes impacting the use of assigned PPE
- A new task is introduced or a previously assigned and evaluated task is expanded in scope

Specific levels of protection will be modified when onsite conditions warrant, and based upon the revisions presented in the SSHP for a specific location. The decision to change levels of protection will be made by the SSHO with concurrence from the PM and the SH&E Manager. Levels of protection will not be downgraded without prior approval from the SH&E Manager.

Head Protection

Resolution Consultants employees and visitors will wear hard hats that meet the requirements of **ANSI Z89.1 (as indicated by the manufacturer's label) if there is a potential of exposure to flying/falling objects or overhead hazards.** Hard hats can be removed in break areas or where their use presents potential safety hazards. Ear protection and face shields may be attached to hard hats. The following criteria will be followed:

- No modification to the shell or suspension is allowed except when such changes are approved by the manufacturer
- Hard hats shall be worn with the bill facing forward unless the SSHO has determined exceptions for certain trades in order to accommodate appropriate mission accomplishments

- No ball caps, knit caps, or other headdress shall be worn under the hard hat that could interfere with the fit or stability of the hard hat
- Protective headgear and components shall be visually inspected on a daily basis for signs of damage (dents, cracks, etc.) that might reduce the degree of safety integrity originally provided
- Headgear will be periodically inspected for ultraviolet degradation as evidenced by cracking or flaking of the helmet
- Drilling holes or in any way changing the integrity of the hard hat is prohibited. Alterations that will reduce the dielectric or impact strength will not be made.
- Chin straps will be worn when wearers are subject to high wind conditions and/or working on elevated structures

Eye Protection

Eye and face protection equipment shall meet the requirements of ANSI Z87.1, and bear a legible and permanent "Z87" logo to indicate compliance with the standard providing side protection. When required to wear eye protection, persons whose vision requires the use of corrective lenses in eyeglasses shall be protected by one of the following:

- Prescription safety glasses providing optical correction and equivalent protection
- Protective glasses with side shields designed to fit over corrective lenses without disturbing the adjustment of the glasses
- Goggles that can be worn over corrective lenses without disturbing the adjustment of the glasses or goggles that incorporate corrective lenses mounted behind the protective lenses

The SSHO will ensure that suitable eye protection is available and provided to all onsite personnel.

The use of eye protection by all personnel will meet the requirements of the following minimum requirements:

- Provide adequate protection against the particular hazards for which they are designed

- Be reasonably comfortable when worn under the designated conditions
- Fit snugly and not unduly interfere with the wearer's movements
- Be durable
- Be easily cleaned and sanitized

Contact lenses do not provide adequate eye protection. Contact lens wearers must use the same additional eye protection as non-lens wearers. Persons whose vision requires correction and who are required to wear eye protection may wear goggles or spectacles of one of the following types:

- Spectacles whose protective lenses provide optical correction (prescription)
- Goggles that can be worn over corrective (prescription) spectacles without disturbing the adjustment of the spectacles
- Goggles that incorporate corrective (prescription) lenses mounted behind the protective lenses

Hearing Protection

Hearing protection will be worn, as appropriate, whenever sound-pressure levels exceed 85-decibel A-weighted sound level (dBA) steady-state expressed as a time-weighted average or 140 dBA impulse, or as desired by individual workers when working around noise-producing equipment. Hearing protection worn by personnel will comply with the requirements of 29 CFR Part 1910.95(j), and will provide a minimum noise reduction rating of at least 21.

Hearing protection will be worn at all times when normal conversation becomes difficult at distances of 3 feet or less, such as during the operation of heavy equipment. The use of hearing protection is anticipated only during heavy equipment support activities and its necessity will be detailed in the applicable AHAs for the individual tasks.

Foot Protection

All workers entering designated fieldwork areas will wear sturdy leather or leather/synthetic combination work boots with safety toes that provides adequate ankle support and provide adequate protection for the task being performed. Sandals and other open-top footwear are not acceptable in designated fieldwork areas.

Hand Protection

Employees will use appropriate hand protection when exposed to hazards that could cause injury to the hands. Gloves must resist puncturing and tearing, as well as provide any necessary chemical resistance. Generally, leather or Kevlar gloves will be worn during material and equipment handling activities and Nitrile gloves will be used for chemical protection as indicated in the AHA developed for the specific task and during biological hazard avoidance.

Traffic Safety Vests

When working on or near public roads and when working around moving vehicles at designated field work areas, all personnel will wear traffic safety vests, shirts, or similar colored garment so as to provide high visibility to drivers/operators (e.g., Day-Glo orange/green).

PPE Use

All site personnel will be given initial PPE-specific training. This training will be given by the SSHO prior to personnel participating in site operations where PPE is required. All personnel receiving PPE training will be required to demonstrate an understanding of the training topics and the ability to correctly use the PPE. This will be accomplished through the SSHO supervising and visually **inspecting each individual's ability to properly don and use the PPE during its initial use.** Upon completion of the training and after each employee has successfully demonstrated the requisite understanding, the SSHO will complete any applicable training completion form.

PPE Program Effectiveness

Based on the potential inhalation hazard and potential chemical exposures on this site, Level D PPE is considered adequate for the work that is to be accomplished at the site. If work tasks, are added to the Statement of Work, after approval of this APP, the PM and SSHO shall identify and assess the task hazards, and relay that information to the SH&E Manager. The SSHO, in conjunction with the SH&E Manager, will prepare an amendment to the APP/SSHP and submit the amendment for approval to NAVFAC. The amendment will be added to the APP/SSHP upon approval.

The SSHO will ensure PPE use complies with all applicable OSHA, NAVFAC, and Resolution Consultants requirements.

PPE Inspection and Care

Maintenance of PPE can vary greatly, based upon the complexity of the PPE and the intricacy of the repair involved. **The SSHO will become familiar with the manufacturer's recommended** maintenance, and when possible, repair defective PPE. If unable or unauthorized to conduct the repair, the SSHO will return the item to the manufacturer for repair, or to procure a replacement.

The SSHO will be responsible for ensuring that PPE is in good, clean, working order prior to the initial issuing of the PPE. Once issued, site personnel will ensure that re-usable articles of PPE are maintained in a clean, sanitary fashion. During the work task, co-workers should periodically inspect each other for the proper use of PPE. For items used inside an exclusion zone, site personnel will follow the requirements of the Site-Specific Decontamination Plan, and ensure that the PPE is properly decontaminated in the Contaminate Reduction Zone before removing the item from the exclusion zone.

9.h. Hazard Communication Program

Resolution Consultants will implement a hazard communication program on field projects managed by the SSHO responsible for maintaining a list of hazardous materials used on the site, as well as **MSDS's for each hazardous material**. Details of the program are contained in SH&E SOP 05-507-*Hazardous Materials Communication WHMIS* which includes the development of a site-specific Hazard Communication Plan, complete with inventory log, which will be developed for the project site

The program establishes procedures for Resolution Consultants employees and subcontractors who handle and store chemical products at project sites. It ensures that hazards of all chemicals purchased are evaluated and the information concerning their hazards is transmitted to employees. The delivery of information is to be accomplished by employee training, container labeling, and other forms of warning and MSDSs. All MSDSs are requested from the suppliers at the time of order. If not available, then a recent MSDS will be downloaded off the Internet.

The requirements defined in this program apply to all Resolution Consultants facilities, projects, employees, and subcontractors, which receive, use, handle, store, transport, or distribute hazardous substances.

All hazardous substances found in a particular workplace shall be listed on a Hazardous Substance Inventory (HSI). The HSI will be reviewed at least annually. New hazardous substances entering a workplace (e.g., project-specific materials) shall be added to the HSI upon receiving and reviewing the MSDS. The HSI includes the following information:

- Product name
- Chemical name (if different from product name)
- Manufacturer's name
- Approximate typical quantity
- Location of substance (i.e., work area)
- Description of use

A copy of the most current HSI, along with the corresponding MSDS and a copy of this program (or site-specific program), will be available onsite for review by all employees. The name of the material (product or chemical) on the HSI must be consistent with the MSDS for that material. A site map will be attached to the inventory showing where inventoried substances are stored. The inventory and site map will be updated as frequently as necessary to ensure accuracy.

Material Safety Data Sheets

Resolution Consultants does not manufacture, package, or distribute hazardous commodities. However, as an end user, Resolution Consultants must maintain hazard documentation for each hazardous substance used on each job site. This documentation will take the form of a listing of all onsite hazardous substances, and copies of manufacturer developed MSDSs for each listed item.

A MSDS shall be available for every hazardous substance used or stored on each job site. Copies of **all MSDS's** will be maintained onsite as an Appendix to the site-specific SSHP. All site personnel will **be briefed as to the location of the MSDS's, and will have immediate access to examine any MSDS** at any time during their work shift.

MSDSs received for consumer products, articles and other materials not covered by this procedure will be maintained and made available to employees.

For on-going projects, each MSDS associated with a material no longer in use will be marked as obsolete and the date it was obsolete. At the completion of any project, the accumulated MSDSs will be maintained as part of the project records. **NO MSDS ASSOCIATED WITH ANY PROJECT WILL BE DESTROYED.**

Employees are required to report any hazardous substance found at the project site that is not on the list of hazardous substances. The report is to be made to the PM and Site Supervisor. If no MSDS accompanies a hazardous substance, the manufacturer, distributor, or importer will be immediately notified and requested to provide one as soon as possible. The request will be documented in a letter or telephone log. If this request is not honored, the SH&E Department will be notified.

When purchasing hazardous substances, the verbal or written purchase order will request an MSDS be sent with the shipment. For each facility and/or project, the MSDS will be kept along with the HSI in a location that is readily accessible to all employees at all times during their work periods. Additionally, the MSDSs and HSI will be available to employees for review in such a way so that the assistance of a supervisor is not necessary.

Labels

All hazardous substances received from outside suppliers will conform to legal requirements and display on each container, as a minimum, the following:

- Identification of the hazardous substance(s)
- Appropriate hazard warnings such as an Hazardous Materials Identification System and/or National Fire Protection Association-type label
- Name and address of the manufacturer, importer, or other responsible party

Any failure to have a label on the container at the time of receipt will be cause to refuse delivery of the product in addition to the following guidance:

- Stationary process containers may have signs, placards, process sheets, batch tickets, operating procedures, or other written material in lieu of fixed labels on the containers, as long as the alternative method conveys hazard information. The written materials will be readily accessible to the employees in the work area.

- Although the practice is not recommended, if an employee will use the hazardous substance in a portable container immediately, the portable container need not be labeled when the substance is transferred from the labeled container. **The term "immediate use" is intended** to mean that the hazardous chemical will be exclusively under the control of and used by the person performing the transfer at all times and work will be completed within the current work shift.
- Containers of hazardous substances transferred from labeled containers and not intended for the immediate use of the employee performing the transfer must be labeled in accordance with a hazardous materials identification system or an equivalent commercial system
- Labels on incoming containers will not be removed or defaced
- Labels or other forms of warning will be legible, in English, and prominently displayed on the containers, or readily available throughout each work shift
- Container size is not the determining factor in deciding if a label is required; ALL containers of hazardous chemicals must be labeled

Hazard Communication Training

Due to the nature of our business, the information and training provided to Resolution Consultants employees with regard to hazard communication will take two forms: general and specific. General training and information will include the following:

- The elements and requirements of the OSHA Hazard Communication standard (29 CFR 1910.1200) and applicable state regulation
- Tasks and operations where hazardous substances are present
- The location and availability of the written Hazard Communication Program, including the list(s) of hazardous substances and MSDS's and how employees can obtain and use hazard information

- The methods and observations that may be used to detect the presence or release of a hazardous substance, such as personal and area monitoring, continuous monitoring devices, visual appearance or odor of hazardous substances when being released, etc.
- The physical and health hazards of the substances in the work area
- The measures they can take to protect themselves from these hazards, including specific procedures implemented for the project or shop to protect employees from exposure to hazardous substances, such as appropriate work practices, emergency procedures, and PPE to be used
- The project- or shop-specific details of the Hazard Communication Program, including an **explanation of the labeling system and the MSDS's, and how employees can obtain and use** the appropriate hazard information
- Information for their physician to receive, regarding hazardous substances to which the employee may be exposed according to provisions of this section
- Freedom from discharge or other discrimination due to the employee's exercise of the rights afforded pursuant to the provisions of the Hazardous Substances Information and Training Act

Site-Specific Hazard Communication Training regarding safe handling and use of hazardous materials found on the HSI will be presented during site-specific training programs. This training may be for specific hazardous materials or for groups of hazardous substances, including flammable/combustible liquids, compressed gases, organic solvents, corrosives, and toxic metals. Additional specific training will be provided to the affected employees any time a new hazardous substance is introduced into the workplace (e.g., project specific substances) and/or when an employee is reassigned. All training conducted will be documented and copies of the documentation included in the permanent project files.

The SSHO must ensure that project personnel can immediately obtain the required information about chemicals of concern during an emergency.

Handling Controls and PPE

When engineering and work practice controls or substitution are either infeasible or insufficient, appropriate PPE and chemical hygiene facilities will be provided and used for the transportation, use, and storage of hazardous or toxic agents.

When irritants or hazardous substances may contact skin or clothing, chemical hygiene facilities and PPE will be provided. PPE may include suitable gloves, face/eye protection, and chemical protective suits. Required task-specific PPE are identified in the AHAs.

The CIH, CSP, or other competent personnel will determine the scope and type of protective equipment.

Special attention shall be given to selecting proper chemical protection when working with materials **designated with a "skin" notation by Occupational Exposure Limits**. Such materials may produce systemic toxic effects through absorption through unbroken skin.

When eyes or body of any person may be exposed to hazardous or toxic agents, suitable facilities for quick drenching or flushing of the eyes and body will be provided in the work area for immediate emergency use and shall be no more than 10 seconds from the hazardous material.

Emergency eyewash equipment must be provided where there **is the potential for an employee's** eyes to be exposed to corrosives, strong irritants, or toxic chemicals. The emergency eyewash equipment must irrigate and flush both eyes simultaneously while the operator holds the eyes open.

Storage prior to transportation of hazardous chemicals, materials, substances, and wastes will be under the supervision of a qualified person. Transportation, use, and storage of hazardous or toxic agents will be planned and controlled to prevent contamination of people, animals, food, water, equipment, materials, and environment.

All storage of hazardous or toxic agents shall be in accordance with the recommendations of the manufacturer, OSHA, and National Fire Protection Association requirements and accessible only to authorized personnel.

Disposal of surplus or excess hazardous or toxic agents will occur in a manner that will not contaminate or pollute any water supply, ground water, or streams; and will comply with federal, state, and local regulations and guidelines.

Containers used to hold hazardous or toxic agents should not be used to hold other materials unless they have been managed or cleaned under hazardous waste and Department of Transportation (DOT) regulatory requirements. Every hazardous or toxic agent being transported for disposal shall be transported with a copy of the substance's MSDS whenever applicable.

Persons who prepare shipments of hazardous chemicals, materials, substances, and/or wastes that are defined as hazardous material under DOT regulations, are required to be DOT trained, certified, and issued an appointment letter in accordance with Defense Transportation Regulation 4500.9-R, Chapter 204.

9.i. Process Safety Management Plan

This section is not applicable to the tasks being performed for this project.

9.j. Lead Abatement Plan

This section is not applicable to the tasks being performed for this project.

9.k. Asbestos Abatement Plan

This section is not applicable to the tasks being performed for this project.

9.l. Radiation Safety Program

This section is not applicable to the tasks being performed for this project.

9.m. Abrasive Blasting

This section is not applicable to the tasks being performed for this project.

9.n. Heat/Cold Stress Monitoring Plan

Heat Stress

Heat stress is one of the most common (and potentially serious) illnesses that affect site workers. When site personnel are engaged in operations involving hot environments, a number of physiological responses can occur, which may seriously affect the health and safety of the workers.

These affects can be eliminated or controlled through the use of a comprehensive heat stress prevention and monitoring program.

It is the responsibility of the SSHO and each employee to ensure that temperature stress controls are adequate for the site conditions and tasks. All employees, and specifically the SSHO, are empowered and expected to stop or modify work and take any precautionary measures to prevent temperature related illnesses.

Individuals vary in their susceptibility and degree of response to stress induced by increased body heat. Heat stress can result in health effects ranging from transient heat fatigue to serious illness or death. Heat stress is caused by a number of interacting factors including environmental condition, clothing, workload, and the individual characteristics of the worker. Because heat stress is probably one of the most common (and potentially serious) illnesses at work sites, regular physiological or area monitoring (as appropriate) and other preventive precautions are vital. Factors that may predispose a worker to heat stress include:

- Lack of physical fitness
- Lack of acclimatization to hot environments
- Degree of hydration
- Level of obesity
- Current health (i.e., having an infection, chronic disease, diarrhea, etc.)
- Alcohol or drug use
- **The worker's age and sex**
- Prior history of heat stress

Effects of PPE

The amount, and type of PPE worn, directly influences reduced work tolerance and the increased risk of excessive heat stress. PPE adds weight and bulk, **severely reduces the body's access to** normal heat exchange mechanisms (evaporation, convection, and radiation), and increases energy

expenditure. Therefore, when selecting PPE, each item's benefit should be carefully evaluated in relation to its potential for increasing the risk of heat stress. Once PPE is selected, the safe duration of work/rest periods should be determined based on the following criteria and that of the recommendations of the ACGIH Threshold Limit Value (TLV) handbook:

- Anticipated work rate
- Ambient temperature and other environmental factors
- Type of protective ensemble
- Individual worker characteristics and fitness

Sweating does not cool the body unless moisture is removed from the body. The use of PPE reduces the body's ability to eliminate large quantities of heat because the evaporation of sweat is decreased. The body's effort to maintain an acceptable temperature may become impaired and this may cause heat stress. Increased body temperature and physical discomfort also promote irritability and a decreased attention to the performance of hazardous tasks. For this project, Level D PPE will be utilized, thus providing minimal increase in the potential for heat stress. Level D PPE is defined as standard work clothes with sturdy work boots, long pants, short, or long sleeve shirt as applicable, safety glasses, appropriate gloves, hard hats, and safety boots.

Early Symptoms of Heat Related Illness

The following are the early symptoms of heat related problems that may be experienced by the field teams:

- Decline in task performance
- Lack of coordination
- Decline in alertness
- Unsteady walk
- Excessive fatigue

- Muscle cramps
- Dizziness

Heat Stress Disorders

This section outlines the major heat related illness that may result from exposure to high heat environments, which include heat rash, fainting, heat cramps, heat exhaustion, and heat stroke. **For the purpose of this program, reference to “liquids” will indicate the use of water or an electrolyte replacement solution, and not tea or coffee (unless it is decaffeinated) or carbonated soft drinks.**

Heat Rash

Heat rash is caused by continuous exposure to heat and humid air and is aggravated by wet chafing clothing. **This condition can decrease a worker’s ability to tolerate hot environments.**

- **Symptoms:** Mild red rash, especially in areas of the body that sweat heavily.
- **Treatment:** Decrease amount of time in protective gear and provide powder such as cornstarch or baby powder to help absorb moisture and decrease chafing. Maintain good personal hygiene standards and change into dry clothes if needed.

Heat Cramps

Heat cramps are caused by a profuse rate of perspiration that is not balanced by adequate fluid and electrolyte intake. The occurrence of heat related cramps are often an indication that excessive water and electrolyte loss has occurred, which can further develop into heat exhaustion or heat stroke.

- **Symptoms:** Acute, painful spasms of voluntary muscles such as the back, abdomen, and extremities.
- **Treatment:** Remove victim to a cool area and loosen restrictive clothing. Stretch and massage affected muscles to increase blood flow to the area. Have patient drink one to two cups of liquids immediately, and every twenty minutes thereafter. Consult with physician if condition does not improve. If available, an electrolyte replacement solution should be taken along with liquids.

Heat Exhaustion

Heat exhaustion occurs due to the large fluid and salt loss from profuse sweating. It is a state of very definite weakness or exhaustion caused by increased stress on various organs to meet increased demands to cool the body due to excessive loss of fluids from the body. This condition leads to inadequate blood supply and cardiac insufficiency. Heat exhaustion is less dangerous than heat stroke, but nonetheless must be treated. If allowed to go untreated, heat exhaustion can quickly develop into heat stroke.

- **Symptoms:** Pale or flushed, clammy, moist skin, profuse perspiration, and extreme weakness. Body temperature is basically normal or slightly elevated, the pulse is weak and rapid, and breathing is shallow. The individual may have a headache, be dizzy or nauseated.
- **Treatment:** Remove the individual to a cool, air-conditioned place, loosen clothing, elevate feet, and allow individual to rest. Consult physician, especially in severe cases. Have patient drink one to two cups of liquids slowly and immediately, and every twenty minutes thereafter. Total liquid consumption should be about one to two gallons per day. If the signs and symptoms of heat exhaustion do not subside, or become more severe, immediate medical attention will be required.

Heat Stroke

Heat stroke is an acute and dangerous reaction to heat stress caused by failure of the heat regulating mechanisms of the body. **Heat stroke occurs when the body's system of** temperature regulation fails and the body temperature rises to critical levels. When this occurs, the body core temperature rises very rapidly to a point ($>105.8^{\circ}\text{F}$) where brain damage and death may result if the person is not cooled quickly.

- **Symptoms:** The victim's skin is hot, and may or may not be red, dry, and/or spotted, due to the fact that the individual may still be wet from having sweat while wearing protective clothing earlier; nausea; dizziness; confusion; extremely high body temperature; rapid respiratory and pulse rate; delirium; convulsions; unconsciousness or coma.
- **Treatment:** Cool the victim immediately. If the body temperature is not brought down quickly, permanent brain damage or death may result. The victim should be moved to a shady area; he should lie down and keep feet elevated. Cool the victim by either sponging or immersing the victim in very cool water to reduce the core temperature to a safe level

(<102°F). If conscious, give the victim cool liquids to drink. Observe the victim and obtain immediate medical help. Do not give the victim caffeinated or alcoholic beverages. Heat stroke is considered a medical emergency. Medical help should be summoned immediately. **EARLY RECOGNITION AND TREATMENT OF HEAT STROKE ARE THE ONLY MEANS OF PREVENTING BRAIN DAMAGE OR DEATH.**

Preventive Measures

Proper training and preventive measures will help avert serious illness and loss of work productivity. Preventing heat stress is particularly important because once someone suffers from heat exhaustion, that person may become predisposed to additional heat injuries. In order to avoid heat related illnesses, proper preventive measures will be implemented whenever environmental conditions dictate the need, normally whenever the temperature reaches at least 70°F. These preventive measures represent the minimal steps to be taken and will include the following procedures.

The SSHO or other authorized person will observe each site worker prior to the start of daily operations, and periodically throughout the day, to determine the individuals susceptible to heat induced stress. Evidence of extreme dehydration, illness, or drug or alcohol use may require the **SSHO to restrict the worker's activities until such time** as the worker is fit for duty. Personnel identified as being at high risk for heat stress who are allowed to participate in site operations will be monitored frequently by the SSHO.

Site workers will be trained to recognize and treat heat-related illnesses. This training will include the signs, symptoms, and treatment of heat stress disorders. **In order to maintain workers' body fluids at normal levels, workers will be encouraged to drink, as a minimum, approximately sixteen ounces of liquids prior to start of work in the morning, after lunch, and prior to leaving the site at the conclusion of the day's activities. Disposable four to twelve ounce cups and liquids will be provided onsite. Liquids to be provided will be water. Liquids containing caffeine should be avoided.**

When ambient conditions and site workload requirements dictate, as determined by the SSHO, workers will be required to drink a minimum of 16 to 32 ounces of liquids during each rest cycle. The normal thirst mechanism is not sensitive enough to ensure that enough water will be consumed to replace lost sweat. When heavy sweating occurs, workers shall be encouraged to drink even though they may not be thirsty. A shelter or shaded area may be provided where workers can be protected from direct sunlight during rest periods.

Monitoring of ambient or physiological heat stress indices will be conducted to allow prevention and/or early detection of heat-induced stress. Monitoring will be conducted in accordance with applicable paragraphs of this APP.

Site workers will be given time to acclimatize to site work conditions, temperature, protective equipment, and workload. Acclimatization is the adaptive process that usually takes two to six days of continued work in hot environments, resulting in a decrease of the physiological strain and **allowing the worker's body to become adjusted to the level and type of work required by the application of a constant environmental stress.** This process involves a gradual increase in the **individual's workload** over the required period, the length of which depends upon the nature of the **work performed, ambient temperatures, and the individual's susceptibility to heat stress.**

Work schedules will be adjusted as follows:

- Modify work/rest schedules according to monitoring requirements
- Mandate work slowdowns as needed
- Rotate personnel: alternate job functions to minimize over-stress or overexertion at one task
- Add additional personnel to work teams
- Perform work during cooler hours of the day if possible

Workers will be encouraged to achieve and maintain an optimum level of physical fitness. Increased physical fitness will allow workers to better tolerate and respond to hot environments and heavy workloads. In comparison to an unfit person, a fit person will have less physiological strain, a lower heart rate and body temperature, and a more efficient sweating mechanism.

Alcohol should not be consumed in a hot environment because the loss of body fluids increases the risk of heat stress.

Heat Stress Monitoring

Because the incidence of heat stress depends on a variety of factors, all workers shall be monitored. Initially, the frequency of physiological monitoring depends on the air temperature adjusted for solar radiation and the level of physical work. The length of the work cycle will be governed by the frequency of the required physiological monitoring.

Monitoring of personnel wearing PPE should begin when the ambient temperature is 72°F or above. Table 9-1 presents the suggested frequency for such monitoring. Monitoring frequency should increase as the ambient temperature increases or as slow recovery rates are observed.

A person with a current first aid certification who is trained to recognize heat stress symptoms should perform heat stress monitoring. Other methods for determining heat stress monitoring, such as the wet bulb globe temperature (WBGT) index from ACGIH TLV booklet or portable heat stress monitoring instrumentation can be used.

Table 9-1		
Suggested Frequency of Physiological Monitoring for Fit and Acclimatized Workers		
Adjusted Temperature^{1,2}	Normal Work Ensemble³	Impermeable Ensemble
90°F (32.2°C) or above	After each 45 min. of work	After each 15 min. of work
87.5°-90°F (30.8°-32.2°C)	After each 60 min. of work	After each 30 min. of work
82.5°-87.5°F (28.1°-28.1°C)	After each 90 min. of work	After each 60 min. of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 min. of work	After each 90 min. of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 min. of work	After each 120 min. of work

Notes:

¹ For work levels of 250 kilocalories/hour

² Calculate the adjusted air temperature (ta adj) by using this equation: ta adj °F = ta °F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)

³ A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

When workers are wearing permeable clothing (i.e., standard cotton work clothes), follow recommendations for monitoring requirements and suggested work/rest schedules in the current ACGIH TLVs for Heat Stress.

When monitoring the worker physically, measure:

- Heart rate:
 - Count the radial pulse during a 30-second period as early as possible in the rest period
 - If the heart rate exceeds 110 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same
 - If the heart rate still exceeds 110 beats per minute at the next rest period, shorten the following work cycle by one-third
- Oral temperature:
 - Use a clinical thermometer (three minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking)
 - If oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period
 - If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third
 - Do not permit a worker to wear a semi-impermeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C)

For site conditions where personnel are working in Level D PPE, and the ambient temperature is greater than 72°F, the SSHO may conduct WBGT monitoring to assist in controlling the potential for site workers experiencing heat related adverse health effects. The SSHO may take readings on a WBGT monitor throughout the day to determine the work/rest schedule to be implemented (see Table 9-2).

Table 9-2 Permissible WBGT Heat Exposure Threshold Limit Values (TLV)			
Work — Rest Regimen	Work Load		
	Light	Moderate	Heavy
Continuous work	86 (30.0)	80 (26.7)	77 (25.0)
75% Work - 25% Rest, each hour	87 (30.6)	82 (28.0)	78 (25.9)
50% Work - 50% Rest, each hour	89 (31.4)	85 (29.4)	82 (27.9)
25% Work - 75% Rest, each hour	90 (32.2)	88 (31.1)	86 (30.0)

Note:

* Consult the ACGIH TLV booklet for definitions of Light, Moderate, and Heavy workloads. Values are given in F and (C) WBGT, and are intended for workers wearing single layer summer type clothing. Use of semi or totally impermeable clothing requires monitoring in accordance with the Heat Stress Prevention Program. As workload increases, the heat stress impact on a non-acclimated worker is exacerbated. For non-acclimated workers performing a moderate level of work, the permissible heat exposure TLV should be reduced by approximately 2.5°C.

The values outlined in Tables 9-1 and 9-2 are designed such that nearly all acclimatized, fully clothed workers with adequate water and electrolyte replacement liquids intake will be able to function without the body temperature exceeding 100.4°F (38°C).

Heat Stress Documentation

The SSHO will be responsible for recording all heat stress related information. This will include training sessions and monitoring data. Training sessions will be documented on the Safety Meeting and Training Form, and WBGT data and other information will be recorded on a heat stress monitor log.

Cold Stress

If work on this project is conducted in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Work will cease under unusually hazardous conditions (e.g., wind-chill less than 0°F, or wind-chill less than 10°F with precipitation). Systemic cold exposure is referred to as hypothermia. Localized cold exposure is generally labeled frostbite. Recognition of the symptoms of cold related illness will be discussed during the health and safety briefing conducted prior to the onset of site activities. Refer to the 2003 ACGIH TLV for Chemical Substances and Physical Agents for additional information on cold stress prevention, monitoring, and work-warming regimens.

Hypothermia

Hypothermia is a life-threatening condition in which the core body temperature falls below 95°F. Hypothermia can occur at temperatures above freezing particularly, when the skin or clothing

becomes wet. During exposure to cold, maximum shivering occurs when the core temperature falls to 95°F. As hypothermia progresses, depression of the central nervous system becomes increasingly more severe. This accounts for the progressive signs and symptoms ranging from sluggishness and slurred speech to disorientation and eventually unconsciousness (see Table 9-3).

Table 9-3 Progressive Clinical Symptoms of Hypothermia	
Core Temperature (°F)	Clinical Signs
95°	Maximum shivering
87° - 89°	Consciousness clouded; blood pressure becomes difficult to obtain; pupils dilated
84° - 86°	Progressive loss of consciousness; muscular rigidity; respiratory rate decreases
79°	Victim rarely conscious
70° - 72°	Maximum risk of ventricular fibrillation

The ability to sustain metabolic rate and to reduce skin blood flow is diminished by fatigue. Thus, fatigue increases the risk of severe hypothermia by decreasing metabolic heat. Additionally, because blood flow through the skin is reduced to conserve heat, the skin and underlying tissues become more susceptible to frostbite.

Frostbite

Frostbite is both the general and medical term given to areas of cold injury. Unlike hypothermia, frostbite rarely occurs unless environmental temperatures are less than freezing and usually less than 20°F. Frostbite injuries occur most commonly on the distal parts of the body (nose, earlobes, hands, and feet) that are subject to intense vasoconstriction. The three general categories of frostbite are:

Frostnip — A whitened area of the skin, which is slightly burning or painful

Superficial frostbite — Waxy, white skin with a firm sensation but with some resiliency. **Symptomatically feels “warm” to the victim with a** notable cessation of pain

Deep frostbite — Tissue damage deeper than the skin, at times, down to the bone. The skin is cold, numb, and hard

Prevention of Cold Related Illness

The following are precautions that will be taken to prevent illness relating to cold stress:

- Educate worker to recognize the symptoms of frostbite and hypothermia
- Ensure the availability of an enclosed, heated environment within the vehicles. The nearest heated environment will be the interior of the vehicles at the site
- Ensure the availability of dry changes of clothes
- Record temperature readings
- Ensure the availability of warm beverages, preferably non-caffeinated

Monitoring for Cold Exposure

Cold stress monitoring will be conducted in accordance with the ACGIH cold stress TLV. The TLV objective is to prevent the deep body core temperature from falling below 96.8°F and to prevent cold injury to body extremities. Temperature monitoring and recording will be initiated in the following situations:

- At the SSHO discretion when suspicion is based on changes in worker's performance or mental status
- At worker's request
- As a screening measure whenever a worker on the site develops hypothermia
- Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

9.o. Crystalline Silica Monitoring Plan

This section is not applicable to the tasks being performed for this project.

9.p. Night Operations Lighting Plan

This section is not applicable to the tasks being performed for this project.

9.q. Fire Prevention Plan

All project personnel will be responsible for observing and reporting fires and conditions that could lead to fires. During all onsite activities, the following practices will be used for fire prevention and protection:

- Smoking onsite is prohibited in designated work areas, contamination reduction zones, and other areas where smoking may create a fire hazard (e.g., dry fields or forested areas)
- A designated smoking area will be established (if allowed by base regulations) as necessary by the SSHO or Site Supervisors when operations on site begin
- Accumulations of combustible scrap and debris onsite will be promptly removed and properly disposed
- Care will be taken with all equipment to reduce the possibility of sparks or open flames
- Inspect all electrical cords and plugs prior to use; keep cords away from water and moisture
- Fire extinguishers (minimum 2 A:B:C, 10-lb) will be available at the work area and support area
- A fire extinguisher will be available on all pieces of heavy equipment

Requirements for storage of flammable and combustible liquids will include:

- A suitable portable fire extinguisher will be available at the location where flammable or combustible liquids are stored
- **"No Smoking" signs will be posted in the storage area**
- Flammable liquids will be stored in closed containers. Type I or Type II metal safety cans (not greater than 5 gallons capacity) will be used for small quantities. Plastic storage containers are not allowed
- Not more than 60 gallons of Class I or Class II liquids, nor more than 120 gallons of Class III liquids may be stored in a storage cabinet
- Containers of flammable and combustible liquids shall be stored properly when not in use

- The grounds around the storage area will be kept free of weeds, trash, and other unnecessary combustible materials
- Spills will be cleaned up promptly
- Proper bonding and grounding principles will be observed when transferring flammable liquids from one container to another

Fire Extinguishers

Fire extinguishers are divided into categories, based on different types of fires. Each fire extinguisher also has a numerical rating that serves as a guide for the amount of fire the extinguisher can handle. The higher the number rating, the more firefighting power of the extinguisher. The following is a quick guide to project management to help choose the right type of extinguisher:

Class A extinguishers are for ordinary combustible materials such as paper, wood, cardboard, and most plastics. The numerical rating on these types of extinguishers indicates the amount of water it holds and the amount of fire it can extinguish.

- Class B fires involve flammable or combustible liquids such as gasoline, kerosene, grease and oil. The numerical rating for class B extinguishers indicates the approximate number of square feet of fire it can extinguish.
- Class C fires involve electrical equipment, such as appliances, wiring, circuit breakers, and outlets. Never use water to extinguish class C fires – the risk of electrical shock is far too great! Class C extinguishers do not have a numerical rating. The C classification means the extinguishing agent is non-conductive.

9.r. Wild Land Fire Management Plan

This section is not applicable to the tasks being performed for this project.

9.s. Hazardous Energy Control Plan

This section is not applicable to the tasks being performed for this project.

9.t. Critical Lift Plan

This section is not applicable to the tasks being performed for this project.

9.u. Contingency Plan for Severe Weather

Daily weather conditions will be a part of the daily briefing. During severe weather, project personnel will seek shelter in an appropriate location (i.e., building or vehicle). The individual is ultimately responsible for his/her personal safety and has the right to take appropriate action when threatened by severe weather.

Safe Locations during Severe Weather and Locations to Avoid

No place is absolutely safe from severe weather; however, some places are safer than others:

- Large enclosed structures (substantially constructed buildings) tend to be much safer than smaller or open structures
- The risk for lightning injury depends on whether the structure incorporates lightning protection, construction materials used, and the size of the structure
- In general, fully enclosed metal vehicles such as cars, trucks, buses, vans, etc. with the windows rolled up provide good shelter from many weather conditions

AVOID being in or near: High places and open fields, isolated trees, rain or picnic shelters, communications towers, flagpoles, light poles, bleachers (metal or wood), metal fences, water (lakes, streams, rivers, etc.).

When inside a building AVOID: Use of the telephone, washing your hands, or any contact with conductive surfaces with exposure to the outside such as metal door or window frames, electrical wiring, telephone wiring, cable TV wiring, plumbing, etc., if lightning is a factor. Generally speaking, identify and seek shelter that is appropriate for the type of severe weather you are encountering. Proper shelter will always include sound structure and remove you from the elements. When available, pay attention to weather warning devices such as National Oceanic and Atmospheric Administration weather radio and/or credible weather detection systems, however, do not let this information override good common sense.

Weather-related hazards will directly correlate to the type of weather involved. Hot, dry weather may cause greater dust emissions, particularly during intrusive activities. Rain may increase slip/trip hazards, particularly for ground workers. Additionally, lightning strikes during electrical storms could also be a potential hazard. The following procedures will be implemented once thunder is heard or lightning spotted:

- If thunder is heard, all site personnel are to be alert of any visible lightning flashes. The SSHO will observe the storm front and track the direction it is moving. The SSHO will continue to observe the storm front until it passes or until the prevailing direction is determined to be away from the site.
- If lightning is observed, the Site Supervisor or SSHO are to be notified. When the next **lightning flash is observed, a "second" count shall be initiated from the time the lightning is observed until the thunder from the strike is heard.**
- **The following action guidelines shall be implemented once the "second" count is ≤ 30 seconds:**
 - **"second" count > 30 , the Site Supervisor or SSHO will continually observe the storm front.** If the front is moving away, work will continue. If the front is moving towards the site, the Site Supervisor will initially place workers on alert for potential evacuation.
 - **"second" count ≤ 30 , the Site Supervisor will issue the evacuation command and all workers are to report to the break/lunch trailer.** Work can be re-initiated once the front has passed by and thunder has not been heard for 30 minutes.
- If lightning is observed and the storm front is moving away from or around the site and is > 20 miles away, work will be permitted to continue. The location of the storm can be confirmed via internet access to a local weather website that has a Doppler radar tracking system.

9.v. Float Plan

This section is not applicable to the tasks being performed for this project.

9.w. Site-Specific Fall Protection & Prevention Plan

This section is not applicable to the tasks being performed for this project.

9.x. Demolition Plan

This section is not applicable to the tasks being performed for this project.

9.y. Excavation/Trenching Plan

This section is not applicable to the tasks being performed for this project.

9.z. Emergency Rescue

This section is not applicable to the tasks being performed for this project.

9.aa. Underground Construction Fire Prevention and Protection Plan

This section is not applicable to the tasks being performed for this project.

9.bb. Compressed Air Plan

This section is not applicable to the tasks being performed for this project.

9.cc. Formwork and Shoring Erection and Removal Plans

This section is not applicable to the tasks being performed for this project.

9.dd. Precast Concrete Plan

This section is not applicable to the tasks being performed for this project.

9.ee. Lift Slab Plans

This section is not applicable to the tasks being performed for this project.

9.ff. Steel Erection Plan

This section is not applicable to the tasks being performed for this project.

9.gg. Site Safety and Health Plan for Hazardous Toxic Radiological Waste Work

See the site-specific SSHP, Appendix H to this APP.

9.hh. Blasting Safety Plan

This section is not applicable to the tasks being performed for this project.

9.ii. Diving Plan

This section is not applicable to the tasks being performed for this project.

9.jj. Confined Space Program

This section is not applicable to the tasks being performed for this project.

10. RISK MANAGEMENT PROCESSES

Risk management processes are implemented to insure all project hazards have been identified by the management team and safety professionals, and that procedures are in place to control the exposure to these hazards.

The following are the major types of hazards that are anticipated for tasks at CNC Building 13:

- Chemical Hazards
- Biological Hazards
- Physical Hazards

Each task or activity will have a AHA developed to define the activity to be performed. The AHA will reflect the work sequences, site conditions, anticipated hazards, control methods, equipment requirements, and training to be implemented to eliminate or reduce the hazards.

Operations at the site may require additional tasks not identified or addressed in the SSHP. Before performing any task not covered in this APP or associated SSHP, an AHA must be prepared, and approved by the Regional SH&E Manager.

The specific AHAs identifying the project-specific task hazards and controls are presented in the SSHP, Appendix H to this APP. The following text discusses the major types of hazards.

Chemical Hazards

Chemical hazards include the materials that are found onsite during field tasks and those chemicals brought on the site to support the project. Resolution Consultants has effective Hazard Communication, Personal Protective Equipment, and Environmental Monitoring Programs to control chemical hazards.

General Rules and Procedures

Occupational Exposure Limits: The Permissible Exposure Limits of OSHA and the TLVs of the ACGIH will not be exceeded. Occupational exposure limits for the laboratory chemicals in use at this project are listed in the MSDS's for each chemical.

Avoidance of "routine" exposure:

- Develop and practice safe habits
- Avoid unnecessary exposure to chemicals by any route
- Do not smell or taste chemicals
- Inspect gloves before use

Eating, smoking, etc.:

- Avoid eating, drinking, smoking, gum chewing, or application of cosmetics in areas where chemicals are present
- Wash hands before conducting these activities
- Storage, handling, or consumption of food or beverages from refrigerators used for samples holding is prohibited

Personal housekeeping:

- Keep the work area clean and uncluttered
- Properly label and store chemicals and equipment
- Clean up the work area on completion of an operation or at the end of each shift

Personal protection

- Ensure that appropriate eye protection (ANSI approved Safety Glasses with side shields) is worn by all persons, including visitors, where chemicals are stored or handled
- Wear appropriate gloves when the potential for contact with toxic materials exists, inspecting them before each use, washing them before removal, and replacing them periodically

- Use any other protective and emergency apparel and equipment as appropriate
- Use of contact lenses in areas where chemicals may be encountered is not permitted
- Remove PPE immediately on discovering significant contamination

Biological Hazards

Biological hazards, which may be found onsite, include insects, arachnids, such as spiders, ticks, mites, and plants. Several varieties of snakes and other wildlife are also common hazards in this area. Employee awareness and the safe work practices outlined in the following paragraphs should reduce the risk associated with these hazards to acceptable levels.

The common biological hazards and controls that may be applicable to this project are indigenous hazards that will be discussed during the site orientation training and daily briefings, and where necessary, PPE and first aid treatment protocols will be established during site operations.

Given the current site conditions, employee exposure to biological hazards is anticipated to be low, however; while working inside the building, the potential may increase. IF the SSHO deems it necessary to upgrade PPE based on changing site conditions, amendments to this APP will be made. In an effort to mitigate any potential hazards to employees, the SSHO will assess the work areas during site activities in an effort to delineate the presence of poisonous plants (poison ivy/oak). These areas will be adequately delineated and the location of material fully disclosed to all onsite personnel. Modified Level D PPE may be required (per SSHP and AHAs) for work in these areas.

Biological Hazard Injury and Illness Prevention

Contact with bodies of water, animals, insects, and plants can cause injury and illness to personnel. Care must be taken to ensure that these types of injuries are avoided. Some examples of biological hazards include:

1. Natural and artificial bodies of water (e.g., lakes, rivers, ponds, lagoons, etc.), may contain a variety of microorganisms. Microorganisms, in particular, present a significant hazard to personnel who may come into contact with water bodies. Contact with microorganisms in water may result in dermatitis, infection (i.e., in cuts/lacerations), digestive distress, and other diseases.

Always be aware of areas that may contain excessive amounts of microorganisms. Such areas may include areas of standing water; areas of warm water (i.e., cooling tower effluents, etc.); and areas downstream of municipal wastewater treatment. To prevent exposure to microorganisms in water, always adhere to the following:

- Wear protective gloves (i.e., nitrile, etc.) and other appropriate PPE to prevent skin contact with water
 - Never drink from natural or artificial bodies of water; such water is considered non-potable and is not safe for drinking
2. Wild animals, such as snakes, raccoons, squirrels, and rats. These animals not only can bite and scratch, but can carry transmittable diseases (e.g., rabies). Avoid the animals whenever possible. If bitten, go to the nearest medical facility.
 3. Insects such as mosquitoes, ticks, bees, and wasps. Mosquitoes can potentially carry and transmit the West Nile Virus. Ticks can transmit Lyme disease or Rocky Mountain Spotted Fever. Bees and wasps can sting by injecting venom, which causes some individuals to experience anaphylactic shock (extreme allergic reaction). Whenever entering areas that provide a habitat for insects (e.g., grass areas, woods), wear light-colored clothing, long pants and shirt, and spray exposed skin areas with a DEET-containing repellent. Keep away from high grass wherever possible. Keep your eyes and ears open for bee and wasp nests. If bitten by insects, see a doctor if there is any question of an allergic reaction.
 4. Plants such as poison ivy and poison oak can cause severe rashes on exposed skin. Be careful where you walk, wear long pants, and minimize touching exposed skin with your hands after walking through thickly vegetated areas until after you have thoroughly washed your hands with soap and water. Examples of common poisonous or irritating plant species, common to the United States, are shown in Figure 10-1.

Response Measures for Contact with Hazardous Plants

If you have been exposed to poison ivy, oak, or sumac, act quickly because the toxin in the plants penetrates the skin within minutes. If possible, stay outdoors until you complete the first two steps:

1. Cleanse the exposed skin with generous amounts of a surfactant/emulsifying agent and wipe the area clean
2. Wash the skin with water
3. Take a regular shower with soap and warm water. Do not use soap until this point because it will pick up the toxin from the surface and move it around.
4. Wash clothes, tools, and anything else that may have been in contact with the toxin, with alcohol and water. Be sure to wear hand protection during that process.

Signs and symptoms of exposure include redness and swelling that appears 12 to 48 hours after exposure. Blistering and itching will follow. If you have had a severe reaction in the past, you should see an occupational physician right away. Otherwise, according to the Federal Drug Administration, there are quite a few effective over-the-counter products to help with symptoms, including Technu-Wash, Cortaid and Lanacort, baking soda, Aveeno oatmeal bath, and calamine lotion.

<p>Poison Ivy</p> <ul style="list-style-type: none"> • Grows in East, West, Midwest, Texas • Several forms — vine, trailing shrub, or shrub • Three leaflets (can vary 3-9) • Leaves green in summer, red in fall • Yellow or green flowers • White berries 	 
<p>Poison Oak</p> <ul style="list-style-type: none"> • Grows in the East (NJ to Texas), Pacific Coast • 6-foot tall shrubs or long vines • Oak-like leaves, clusters of three • Yellow berries 	 
<p>Poison Sumac</p> <ul style="list-style-type: none"> • Grows in boggy areas, especially in the Southwest and Northern states • Shrub up to 15 feet tall • Seven to 13 smooth-edged leaflets • Glossy pale yellow or cream-colored berries 	 

Figure 10-1 — Hazardous Plant Identification Guide

Physical Hazards

Resolution Consultants has published safe work practice procedures that will provide general guidelines that are to implement when executing work in the field. These procedures apply to all activities, and personnel working on field projects and operations.

During site activities, work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess debris and trash will be collected and stored in an appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal. At no time will debris or trash be intermingled with waste PPE or contaminated materials. Additional information on the requirements of housekeeping can be found in 05-307-*Housekeeping Worksite*.

Manual Lifting

Most materials associated with investigation and remedial activities are moved by hand. The human body is subject to severe damage in the forms of back injury, muscle strains, and hernia if caution is not observed in the handling process. Whenever possible, use mechanical assistance to lift or move materials and at a minimum, use at least two people to lift, or roll/lift with your arms as close to the body as possible. For additional requirements, refer to 05-308-*Manual Lifting Field*.

Appendix A
Resolution Consultants OSHA 300 Form

OSHA's Form 300A

Summary of Work-Related Injuries and Illnesses

Year 2012



U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0178

All establishments covered by Part 1904 must complete this Summary page, even if no injuries or illnesses occurred during the year. Remember to review the Log to verify that the entries are complete.

Using the Log, count the individual entries you made for each category. Then write the totals below, making sure you've added the entries from every page of the log. If you had no cases write "0."

Employees former employees, and their representatives have the right to review the OSHA Form 300 in its entirety. They also have limited access to the OSHA Form 301 or its equivalent. See 29 CFR 1904.35, in OSHA's Recordkeeping rule, for further details on the access provisions for these forms.

Number of Cases

Total number of deaths	Total number of cases with days away from work	Total number of cases with job transfer or restriction	Total number of other recordable cases
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
(G)	(H)	(I)	(J)

Number of Days

Total number of days of job transfer or restriction	Total number of days away from work
<u>0</u>	<u>0</u>
(K)	(L)

Injury and illness Types

Total number of... (M)			
(1) Injury	<u>0</u>	(4) Poisoning	<u>0</u>
(2) Skin Disorder	<u>0</u>	(5) All other illnesses	<u>0</u>
(3) Respiratory Condition	<u>0</u>		

Post this Summary page from February 1 to April 30 of the year following the year covered by the form

Public reporting burden for this collection of information is estimated to average 50 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave. NW, Washington, DC 20210. Do not send the completed forms to this

Establishment information

Your establishment name EnSafe, Inc. (Corporate)

Street 5724 Summer Trees Drive

City Memphis State TN Zip 38134

Industry description (e.g., Manufacture of motor truck trailers)
Environmental and Safety Consultants

Standard Industrial Classification (SIC), if known (e.g., SIC 3715)
8 7 4 4

Employment information

Annual average number of employees 237

Total hours worked by all employees last year 436,096

Sign here

Knowingly falsifying this document may result in a fine.

I certify that I have examined this document and that to the best of my knowledge the entries are true, accurate, and complete.

Michael A. Wood, CPA
Company executive

CFO
Title

(901) 372-7962
Phone

1/21/2013
Date

OSHA's Form 300

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2012



U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

You must record information about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must also record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries and illnesses that meet any of the specific recording criteria listed in 29 CFR 1904.8 through 1904.12. Feel free to use two lines for a single case if you need to. You must complete an injury and illness incident report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

Establishment name EnSafe, Inc. (Corporate)

City Memphis State Tennessee

Identify the person						Describe the case		Classify the case				Enter the number of days the injured or ill worker was:		Check the "injury" column or choose one type of illness:				
(A) Case No.	(B) Employee's Name	(C) Job Title (e.g., Welder)	(D) Date of injury or onset of illness (mo./day)	(E) Where the event occurred (e.g. Loading dock north end)	(F) Describe injury or illness, parts of body affected, and object/substance that directly injured or made person ill (e.g. Second degree burns on right forearm from acetylene torch)	Using these categories, check ONLY the most serious result for each case:							(M)					
						Death	Days away from work	Remained at work		On job transfer or restriction (days)	Away from work (days)	Injury	Skin Disorder	Respiratory Condition	Poisoning	All other illnesses		
						(G)	(H)	(I) Job transfer or restriction	(J) Other recordable cases	(K)	(L)	(1)	(2)	(3)	(4)	(5)		
MEM-01	Ryan Adams	Environmental Technician	2-6-20	Loading dock north end	Struck by falling pipe							x						
Page totals						0	0	0	1	0	0	1	0	0	0	0		

Be sure to transfer these totals to the Summary page (Form 300A) before you post it.

Public reporting burden for this collection of information is estimated to average 14 minutes per response, including time to review the instruction, search and gather the data needed, and complete and review the collection of information. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number. If you have any comments about these estimates or any aspects of this data collection, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Page 1 of 1

(1)	Injury
(2)	Skin Disorder
(3)	Respiratory Condition
(4)	Poisoning
(5)	All other illnesses

OSHA's Form 301

Injuries and Illnesses Incident Report

Attention: This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.



U.S. Department of Labor
Occupational Safety and Health Administration

Form approved OMB no. 1218-0176

This *Injury and Illness Incident Report* is one of the first forms you must fill out when a recordable work-related injury or illness has occurred. Together with the *Log of Work-Related Injuries and Illnesses* and the accompanying *Summary*, these forms help the employer and OSHA develop a picture of the extent and severity of work-related incidents.

Within 7 calendar days after you receive information that a recordable work-related injury or illness has occurred, you must fill out this form or an equivalent. Some state workers' compensation, insurance, or other reports may be acceptable substitutes. To be considered an equivalent form, any substitute must contain all the information asked for on this form.

According to Public Law 91-596 and 29 CFR 1904, OSHA's recordkeeping rule, you must keep this form on file for 5 years following the year to which it pertains.

If you need additional copies of this form, you may photocopy and use as many as you need.

Completed by John Knopf

Title OCS - Corp. H&S Manager

Phone 901-937-4255 Date _____

Information about the employee

- 1) Full Name Ryan Adamson
- 2) Street 608 Wood Valley Drive
- City Memphis State TN Zip _____
- 3) Date of birth _____
- 4) Date hired 5/3/2007
- 5) ☒ Male
☐ Female

Information about the physician or other health care professional

- 6) Name of physician or other health care professional
Jeffrey A. Diabach, M.D.

- 7) If treatment was given away from the worksite, where was it given?

Facility OrthoOne

Street 99 Market Center Drive

City Collierville State TN Zip 38017

- 8) Was employee treated in an emergency room?

☐ Yes
☒ No

- 9) Was employee hospitalized overnight as an in-patient?

☐ Yes
☒ No

Information about the case

- 10) Case number from the Log MEM-01 (Transfer the case number from the Log after you record the case.)
- 11) Date of injury or illness 12/5/2012
- 12) Time employee began work 7AM AM/PM
- 13) Time of event 10:30AM AM/PM ☐ Check if time cannot be determined
- 14) **What was the employee doing just before the incident occurred?** Describe the activity, as well as the tools, equipment or material the employee was using. Be specific. Examples: "climbing a ladder while carrying roofing materials"; "spraying chlorine from hand sprayer"; "daily computer key-entry."
Ascending and descending stairs.
- 15) **What happened?** Tell us how the injury occurred. Examples: "When ladder slipped on wet floor, worker fell 20 feet"; "Worker was sprayed with chlorine when gasket broke during replacement"; "Worker developed soreness in wrist over time."
When employee was descending stairs he felt a pain in his right knee.
- 16) **What was the injury or illness?** Tell us the part of the body that was affected and how it was affected; be more specific than "hurt", "pain", or "sore." Examples: "strained back"; "chemical burn, hand"; "carpal tunnel syndrome."
Tendonitis of the right knee.
- 17) **What object or substance directly harmed the employee?** Examples: "concrete floor"; "chlorine"; "radial arm saw." If this question does not apply to the incident, leave it blank.
Stairs
- 18) **If the employee died, when did death occur?** Date of death N/A

Public reporting burden for this collection of information is estimated to average 22 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Persons are not required to respond to the collection of information unless it displays a current valid OMB control number. If you have any comments about this estimate or any other aspects of this data collection, including suggestions for reducing this burden, contact: US Department of Labor, OSHA Office of Statistics, Room N-3644, 200 Constitution Ave, NW, Washington, DC 20210. Do not send the completed forms to this office.

Appendix B
Resolution Consultants Safety and Health Policy Statement

Safety, Health, and Environmental Policy Statement

PURPOSE

The purpose of this policy is to:

- Establish and maintain a framework for a safe and healthy workplace for all Resolution Consultants and partners' employees and minimize our impact on the environment.
- Outline expectations relative to compliance with governing occupational safety, health and environmental legislation.

COMMITMENT

Resolution Consultants is committed to protecting the safety and health of our employees and meeting our obligations with respect to the protection of others affected by our activities. We are also committed to protecting and preserving the natural environment and communities in which we operate. We will actively seek to conserve energy, water and natural resources and to recycle and reduce waste where appropriate during the execution of our business activities. We and our partners will be good corporate citizens by striving to ensure that our facilities and operations do not pose unreasonable safety or environmental risks, and by participating in community-related activities that promote excellence in safety, health and environmental practices. In all of our activities we will develop and implement appropriate systems and procedures designed to comply with applicable laws, legislation, licensing requirements and stakeholder expectations. Resolution Consultants will plan and design its processes, facilities and projects in a manner that reduces risks and impacts during their entire life cycle, consistent with the direction and objectives of our clients.

OBJECTIVES

Our ultimate goals are simple:

- Prevent work-related injuries or illnesses
- Prevent damage to property and/or equipment from our activities
- Prevent adverse impacts to the environment from our ongoing projects or operations

IMPLEMENTATION

To guide the Implementation efforts required by this policy, the Management Committee will collaborate to establish Safety, Health and Environmental (SH&E)



programs that reflect the following expectations and beliefs:

- SH&E performance will not be compromised for the sake of other business or client demands.
- All accidents are preventable.
- Compliance with all applicable safety, health and environmental rules and regulations at the local, state, provincial and national level is a minimal expectation; we will not be satisfied to simply meet SH&E compliance standards. Where no specific regulation exists, we will comply with our standards and appropriate industry practices.
- We will meet client requirements.
- Concern for employee health and safety will be evident and embedded into all phases of our work by design and through the business decisions that we make.
- We will report on performance using SH&E metrics designed to help achieve established goals.
- We will communicate to all affected employees their Individual SH&E obligations.
- We will incorporate input from employees, customers and partners to continuously improve our SH&E performance. We will periodically review and continually improve our processes to reflect feedback and experience, and ensure they remain relevant and appropriate to the organization.
- We will recognize those who contribute to their improved SH&E performance.


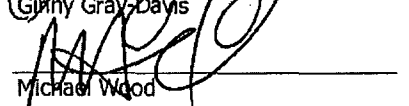
EMPLOYEE RESPONSIBILITIES

All employees will be responsible for:

- Conducting themselves in accordance with directives, standards and procedures established by the applicable SH&E program.
- Helping ensure their fellow employees and stakeholders have the knowledge, skills, and equipment necessary to protect themselves and others.
- Temporarily suspending their personal work activities and requesting guidance from their supervisor before continuing a task when they identify a condition or practice that creates a serious safety, health or environmental risk.
- Immediately reporting safety, health and/or environmental incidents to their supervisor.


Paul Banks

Steve Scott

Resolution Consultants Management Committee:


Ginny Gray-Davis

Michael Wood

Appendix C
Resolution Consultants SH&E Standard Operating Procedures

5-002-Stop Work Authority for Unsafe Work

1.0 Purpose and Scope

- 1.1 This procedure establishes the requirements for Resolution personnel to stop work if they believe there is an imminent safety, health, or environmental risk as described below that will affect them, their co-workers, the public, or the environment.
- 1.2 This procedure applies to all Resolution-based employees and operations.

2.0 Terms and Definitions

- 2.1 **Discrepancy/Deficiency:** An omission or commission, a condition, or a situation that is in conflict with the procedures and requirements of Resolution's SH&E standards.
- 2.2 **Imminent Danger:** An impending or threatening situation that, if left uncorrected, is likely to result in serious injury, property damage, or environmental impairment.
- 2.3 **Potentially Dangerous:** Minor violations that present a low potential for serious injury, property damage, or environmental impairment.
- 2.4 **Stop Work Order:** A directive to cease Resolution-controlled work issued for failure to follow procedures, imminent danger situations/conditions, accumulation of safety violations, etc. The Stop Work Order will apply to Resolution and its direct subcontractors placed at risk by the situations or conditions.

3.0 References

None.

4.0 Procedure

4.1 Roles and Responsibilities

- 4.1.1 **Employees** are responsible for stopping all Resolution-directed work and for bringing it to the attention of the appropriate manager, Site Safety Officer, Project Manager, and/or Contractor representative any time an employee identifies a discrepancy, deficiency, or potentially dangerous condition or act that is likely to cause an unsafe or unhealthy situation or an imminent danger situation.
- 4.1.2 **Employees** may report unsafe working conditions anonymously, but they must provide sufficient detail and promptness to allow Resolution management and the SH&E staff to initiate corrective action.
- 4.1.3 **The Site Safety Officer or Local SH&E Representative** must initiate the development and implementation of corrective actions to eliminate the condition causing the Stop Work Order for Resolution employees and other personnel under Resolution's direct control affected by such condition. Report the details of the Stop Work Order and any corrective actions implemented to the **Project Manager** and the appropriate **Regional SH&E Manager**
- 4.1.4 **Project managers (field task managers, supervisors)**
- Verify that corrective actions taken appropriately address the conditions leading to the Stop Work Order.
 - If Resolution has control over the circumstance that led to the condition, initiate additional corrective actions necessary to correct the conditions leading to the Stop Work Order. Otherwise, remain in communication with the persons or entities that are taking the corrective measures.
 - Communicate such corrective actions and the effects of such corrective actions on the project/office to the client and/or Region Management.

- Ensure that documentation related to the Stop Work Order and corrective actions is placed in the project/office file.

4.1.5 **Regional Business line Managers (regional, district and office managers)**

- Provide support, in accordance with our contractual responsibilities for the project, for the implementation of corrective actions and communications with clients.
- Ensure that no reprimand or reprisal is associated with the initiation of a Stop Work Order.

4.1.6 **Regional SH&E Managers**

- Provide technical guidance for the development and implementation of corrective actions.
- Communicate with the SH&E group and assist with the development of Shared Learning and Safety Alert notices.
- Report all instances when Stop Work Authority has been implemented to the Resolution Consultants SH&E Manager.

4.2 **Commitment**

4.2.1 It is Resolution's policy and firm commitment that employees are expected to stop their work to prevent unacceptable exposure to workplace hazards, including unsafe conditions or worker behaviors, without fear of reprimand or reprisal.

4.2.2 Cases involving reprisal, reprimand, or any attempt to discourage the initiation of Stop Work Orders or reporting of unsafe or unhealthy conditions or situations within Resolution should be immediately reported to the employee's **Manager, Human Resources Representative, and Regional SH&E Manager, Resolution Consultants SH&E Manager.**

4.3 **Authority**

4.3.1 Resolution's stop work authority applies to all work controlled by Resolution, its employees, and Resolution -controlled subcontractor work activities. All Resolution personnel are authorized to stop work in the event of an identified unsafe condition. If the responsible organization fails to provide resolution, or if at any time their acts or failure to act cause substantial harm or imminent danger to the health and safety of project employees, the public, or the environment, Resolution may issue an order stopping work in whole or in part. In the event that Resolution issues a Stop Work Order, an order issued by Resolution Consultants SH&E Manager (or his designee) authorizing the resumption of work must be in place prior to restarting work.

4.3.2 In most cases, a Stop Work Order affects only those areas immediately involved in the hazardous situation. Resolution may issue a Stop Work Order for a portion of the work area(s) or for an entire work area when unacceptable risks exist that cannot be mitigated by reasonable engineering controls, administrative actions, or personal protective equipment. The Stop Work Order will remain in effect until the responsible organization resolves the problem(s) and brings the work area(s) to satisfactory conformance with established SH&E requirements. Work will not resume until appropriate corrective actions have been completed, ensuring that the condition has been rectified. The Stop Work Order will apply to Resolution and its direct subcontractors placed at risk by the situations or conditions.

4.4 **Severity of Hazards**

4.4.1 **Imminent Danger Situations**

- Upon becoming aware of an imminently dangerous situation that Resolution does not control, the employee should immediately inform the persons or entities in control of such imminently dangerous activities and his or her project manager about the situation. If the activities pertain to work that is controlled by Resolution, then the employee may stop the work upon discovering an imminently dangerous situation and then immediately notify his project manager, who may determine the appropriate further action to be taken (including the issuance of a formal Stop Work Order).

- “Stopping work” for Resolution -controlled work includes stabilizing an imminent danger situation to the extent that it can be left unattended for a prolonged period of time until the issue is resolved.
- The person requesting the work stoppage will notify the organization responsible for the work.
- The responsible organization will notify Resolution project/office management immediately of any stop work action(s) taken to rectify the situation.
- An Resolution’s failure to comply with any Stop Work Order in whole or in part may result in disciplinary action. An Resolution subcontractor employee’s failure to comply with any Stop Work Order may result in immediate removal from the project and/or office location.

4.4.2 Potentially Dangerous Situations

- Informal stop work interventions to correct minor conditions (e.g., to remind workers to put on their hard hats, safety glasses, etc.) do not require formal notification.
- If the minor condition cannot be corrected, a formal Stop Work Order must be issued and work must not be resumed until the situation has been eliminated.

4.5 Management-issued Stop Work Orders

4.5.1 **Project Managers** and/or **SH&E Managers** may issue a formal Stop Work Order for Resolution-controlled work in the following situations:

- Imminent danger exists involving the public or employee’s safety and health or damage to the environment, facilities, or property.
- Continuing work or equipment usage will result in significant repair, rework, or removal.
- A project, or any segment of the project, is executed improperly or is out of compliance with applicable regulations or standards.

4.6 Resuming Work

4.6.1 Work associated with the affected area or operation will not resume unless all corrective actions identified in the applicable Stop Work Order have been completed and closed.

4.6.2 All personnel affected by the Stop Work Order will be instructed on the corrective actions and preventative measures taken.

5.0 Records

5.1 The completed Stop Work Order and any corrective action reports generated will be maintained at the project site for the duration of the project and placed in the closed project file.

6.0 Attachments

5-002 Stop Work Order

05-004-Incident Reporting

1.0 Purpose and Scope

- 1.1 To document and report all SH&E incidents in a timely and accurate manner. Additionally, to gather that appropriate Lessons-Learned from all SH&E incidents and that all information required for regulatory reports is generated and filed as required for compliance.
- 1.2 This procedure applies to all Resolution Consultants based employees and operations.

2.0 Terms and Definitions

- 2.1 SH&E Incidents: The following events or situations as applied to Resolution Consultants employees and/or Resolution Consultants-controlled operations are considered SH&E Incidents:
 - 2.1.1 Any injury or illness(including pain and soreness) to an Resolution Consultants employee, that could be potentially work related or become aggravated by the work environment. This includes Resolution Consultants subcontractor, temporary employee or third party contractor, performing work under the control of an Resolution Consultants operation.
 - 2.1.2 Fire, explosion, or flash that is not an intended result of a remediation process, laboratory procedure, or other planned event.
 - 2.1.3 Any accidents involving company-owned, rented, or leased vehicles (including personal vehicles used for company business).
 - 2.1.4 Any breach of a numeric limit attached to a governmental permit or consent.
 - 2.1.5 Any failure to perform the requirements of a non-numeric requirement contained in a government permit or consent.
 - 2.1.6 Any failure to obtain a government permit or consent when required (including failure to obtain revisions before an existing permit or consent expires).
 - 2.1.7 Any notice of violation or notice of non-compliance received from a regulatory authority with enforcement powers.
 - 2.1.8 Property damage resulting from any Resolution Consultants or subcontractor activity.
 - 2.1.9 Unexpected release or imminent release of a hazardous material.
 - 2.1.10 Unexpected chemical exposures to workers or the public.
 - 2.1.11 A safety, health or environmental related complaint from the public regarding Resolution Consultants activities.
 - 2.1.12 SH&E-related incidents that could result in adverse public media interest concerning Resolution Consultants or an Resolution Consultants project.
 - 2.1.13 Any inspection by a federal, provincial, or local safety, health, & environmental enforcement agency.
 - 2.1.14 Any boating incident that includes the following:
 - 2.1.15 Fatality.
 - 2.1.16 A person disappeared from the vessel under circumstances that indicated death or injury.
 - 2.1.17 A person was injured and required medical treatment beyond first aid.
 - 2.1.18 Damage to vessels and other property totaled \$2000 or more.
 - 2.1.19 The boat was destroyed (physically destroyed or sinks).
 - 2.2 Near-Miss Incidents: This is defined as an incident having the potential to cause injury, health effects, environmental impairment, or property damage as described in the above categories – but did not. For example:
 - 2.2.1 A crane drops a 454 kilogram (1,000 pound) beam during a lift – and nobody is hurt, no equipment is damaged.

- 2.2.2 A work crew is conducting a survey along the highway. A vehicle leaves the roadway and the vehicle enters the survey area at 80 kph (50 mph). The vehicle misses an employee by 1 meter (3 feet), the driver recovers control of the vehicle and leaves the area.
- 2.2.3 Awareness of an equipment recall or incident that occurs at another similar worksite.
- 2.2.4 Unsafe condition that could have caused an incident if not corrected.
- 2.2.5 Awareness of an equipment recall or incident that occurs at another similar worksite.
- 2.2.6 Unsafe condition that could have caused an incident if not corrected.
- 2.3 Significant Learning Experience: Defined as a near-miss incident that the affected group (i.e. project team, office staff, etc.) believes could have wide-ranging impacts throughout Resolution Consultants.
- 2.4 Serious SH&E Incident: Any SH&E Incident that meets/involves the following criteria:
 - 2.4.1 Any amputation.
 - 2.4.2 Hospitalization for treatment (admission).
 - 2.4.3 Absence from work for more than 30 calendar days due to work-related injury/illness.
 - 2.4.4 Any single event resulting in more than one employee requiring medical treatment.
 - 2.4.5 Any SH&E-related Consent Agreement/Order/Lawsuit or enforcement action seeking more than \$10,000 or alleging criminal activity.
 - 2.4.6 Any spill or release of a hazardous material that is reportable to a government agency.
 - 2.4.7 Any Notices of Violation.
 - 2.4.8 Near miss incidents that, in the opinion of the SH&E Manager, Project Manager, or Contract Task Order Manager, may have otherwise resulted in any of the above.
- 2.5 **Fatality:** Loss of life of any Resolution Consultants employee, Resolution Consultants subcontractor personnel, client personnel or member of the general public that can be perceived to be related to work performed or controlled by Resolution Consultants.
- 2.6 **General Liability:** Incidents where Resolution Consultants could potentially be held liable.
- 2.7 **Resolution Consultants Recordable Injury: See 05-601 Recordkeeping for definitions.**
- 2.8 **H&W:** Health and Welfare Human Resource office which manages all injury and illness claims.
- 2.9 **HR:** Human Resource office which manages all injury and illness claims.
- 2.10 **Lost Time Days:** The total number of days the injured person accumulates before returning back to regular duties.
- 2.11 **Lost Time Injury or Disease:** A work-related injury or disease that has caused a worker to be absent from his or her regular work following the day that the injury or awareness of the disease occurred.
- 2.12 **Restricted Work (also called "Modified Work"):** Where an injury is medically treated, but the person is not able to return to regular duties. The restricted duties are done within the limitation of the injured person's abilities. (documentation may be required per regulatory requirements).
- 2.13 **Restricted Work Days:** The total number of restricted work days the injured person accumulates before being able to return to regular duties.
- 2.14 **Supervisor's Report of Incident (SRI):** Form used to document incidents which shall be completed within 24 hours.
- 2.15 **Support Services:** Resolution Consultants entities of Legal, Human Resources, Communications, SH&E Department, etc.
- 2.16 **WCB:** Workers Compensation Board
- 2.17 **WC Carrier:** Workers Compensation Insurance Carrier (US).

3.0 References

- 3.1 05-606 Modified Duty Program
- 3.2 05-603 Incident Investigation and Review
- 3.3 05-601 Recordkeeping

4.0 Procedure

- 4.1 All incidents, regardless of type or severity, shall be reported to the on-site supervisor immediately.
- 4.2 All incidents, regardless of type or severity, shall be reported to the employer company safety representative by the supervisor as soon as possible but no later than the end of the current work shift.
- 4.3 Completed Supervisor's Report of Incident shall be submitted the supervisor, Regional SH&E Manager and the Resolution Consultants SH&E Manager within 24 hours.
- 4.4 Fatalities and serious SH&E incidents shall be reported to the Regional SH&E Manager and Resolution Consultants SH&E Manager as soon as reasonably possible but no more than 2 hours after the incident.
- 4.5 Where there is potential for criminal, civil or regulatory action against Resolution Consultants or any of its employees or subcontractors, Resolution Consultants' Contracts Task Order Manager shall be contacted prior to any external communication, correspondence, or meeting concerning any incident, governmental investigation, or environment impact. Resolution Consultants' Contracts Task Order Manager, or the Program Manager, may supplement this Policy or require additional measures to protect the best interests of Resolution Consultants and its employees.

4.6 Roles and Responsibilities

4.6.1 Employees. Each employee involved in an SH&E incident will:

- 4.6.1.1 Notify his/her supervisor immediately that an incident (including a near-miss) has occurred, the circumstances involved, the nature and extent of the injuries/illness, and whether medical treatment may be required. Except for emergency situations, affected employees are required to discuss their injury/illness status with their supervisor and Regional SH&E Manager or project SH&E Professional prior to obtaining medical treatment.
- 4.6.1.2 Assist supervisor in completing appropriate reporting and investigation forms. If issues are raised regarding the content prepared in the SRI, contact the Regional SH&E Manager for guidance.

4.6.2 Supervisors. In an emergency/life-threatening situation, supervisors will:

- 4.6.2.1 Use the appropriate local emergency phone numbers and seek immediate medical care for the employee.
- 4.6.2.2 Address any immediate corrective actions needed. Consult with the Regional SH&E Manager if guidance is required.
- 4.6.2.3 Call the Regional SH&E Manager and Resolution Consultants SH&E Manager as soon as the situation is stabilized, but not later than the end of the current work shift.
- 4.6.2.4 Complete the applicable forms and email to the supervisor and the Regional SH&E Manager within 24 hours of the incident.
- 4.6.2.5 Supervisor's Report of Incident or Near Miss/Observation Report (completed with assistance and acknowledgment from affected employees).
- 4.6.2.6 Federal/State/Province Specific Forms, if required (contact applicable Support Services for guidance).
- 4.6.2.7 Notify the appropriate line or lead manager (i.e. manager responsible for personnel involved/project oversight/business line, etc.).
- 4.6.2.8 As appropriate, initiate an Incident Investigation and Review per the requirements of 5-603 Incident Investigation and Review.

- 4.6.2.9 Completion of any external reporting requirements. For example, the U.S. Coast Guard CG-3865, Recreational Boating Accident Report may be required if the incident involved a boat (contact the SH&E Manager for clarification). See 5-004 Form 4 Incident Response and Reporting for further instruction.
- 4.6.2.10 Report all fatalities and/or serious SH&E incidents to the Resolution Consultants SH&E Manager and Program Manager as soon as reasonably possible but no more than 2 hours after the incident.
- 4.6.3 Resolution Consultants SH&E Manager or Designee:**
 - 4.6.3.1 Coordinate with the appropriate SH&E Incident Reporting Support Staff
 - 4.6.3.2 Upon receipt of an Incident Notification, contact the supervisor to discuss the incident as well as short term and long term corrective actions.
 - 4.6.3.3 Engage Resolution Consultants Medical Provider for non urgent medical guidance, if needed.
 - 4.6.3.4 Notify appropriate Manager of the incident
 - 4.6.3.5 As appropriate, initiate or assist an Incident Investigation and Review.
 - 4.6.3.6 Report all fatalities and/or serious SH&E incidents to the Contracts Task Order Manager and Program Manager as soon as reasonably possible but no more than 2 hours after the incident.
- 4.6.4 Incident Reporting Support Staff:**
 - 4.6.4.1 Inform appropriate personnel that have not already been notified of incidents.
 - 4.6.4.2 Audit data of incident reporting system.
 - 4.6.4.3 Coordinate with Regional SH&E Manager or designee for management of medical support.
 - 4.6.4.4 Forward incident data to support agencies for insurance claims.

5.0 Records

- 5.1 Incident reports and supporting documentation are maintained in a secure file by the incident reporting support staff.
- 5.2 The completed Supervisor Report of Incident and supporting documents must be retained by the appropriate Resolution Consultants parent company. Records relating to occupational injury and accidents must be kept for up to 30 years, plus the length of employment.

6.0 Attachments

- 6.1 05-004-Form 1 Supervisor's Report of Incident
- 6.2 05-004-Form 2 Near-Miss Observation Report
- 6.3 05-004-Form 3 Supervisor's Incident Reporting Flowchart
- 6.4 05-004-Form 4 Incident Response and Reporting Instructions

5-202-Competent Person Designation

1.0 Purpose and Scope

- 1.1 Outlines the process and minimum requirements necessary for classifying an Resolution employee as a “Competent Person” in one or more activity areas.
- 1.2 This procedure applies to all Resolution based employees and operations where Resolution is self-performing the identified activities and where Resolution controls projects performing the activities requiring a Competent Person. Client-mandated requirements may apply on a project-specific basis and shall be addressed in supplemental documents (e.g., Task Hazard Analysis or Health and Safety Plan).
- 1.3 It is recognized that regulations and legislation may contain alternate definitions for Competent Person and it will be the responsibility of the **Project Manager** to determine if conflicts exist between Resolution and applicable regulatory/legislative definitions and resolve the conflict.
- 1.4 When a qualified employee within Resolution is not available to be designated as the Resolution Competent Person, the **Project Manager** in coordination with their **Regional SH&E Manager** may designate an appropriately qualified and trained Contractor employee as the Competent Person for the project.

2.0 Terms and Definitions

- 2.1 **Competent Person:** One who is capable of identifying existing and predictable hazards in surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization and resources to take prompt corrective measures to eliminate them.
- 2.2 **HASP:** Project Health and Safety Plan.

3.0 References

None.

4.0 Procedure

- 4.1 The following activities require an individual to be designated as a competent person:
 - 4.1.1 Asbestos
 - 4.1.2 Blasting & Explosives
 - 4.1.3 Concrete & Masonry Construction
 - 4.1.4 Confined Spaces
 - 4.1.5 Control of Hazardous Energy (Lockout-Tagout)
 - 4.1.6 Cranes & Derricks
 - 4.1.7 Demolition
 - 4.1.8 Electrical Wiring Design & Protections
 - 4.1.9 Fall Protection
 - 4.1.10 Hearing Protection
 - 4.1.11 Heavy Equipment
 - 4.1.12 Ionizing Radiation
 - 4.1.13 Lead

- 4.1.14 Material Hoists & Personnel Hoists
- 4.1.15 Stairways & Ladders
- 4.1.16 Respiratory Protection
- 4.1.17 Rigging Equipment
- 4.1.18 Scaffolds
- 4.1.19 Steel Erection
- 4.1.20 Trench & Excavations
- 4.1.21 Underground Construction
- 4.1.22 Welding & Cutting
- 4.2 The Resolution competent person field functions are dependent on the project activities and Resolution's field function. Refer to each SH&E Standard Operating Procedure (SOP) for the activities listed above and the associated legislative (e.g., OSHA) standard to determine the details of responsibility. Generally, it is the Competent Person's responsibility to be onsite at all times when Resolution staff are performing work governed by this SOP, make daily inspections of the conditions and work activities, and take actions to control any hazards associated with those activities.
- 4.3 The *5-202-Competent Person Designation* shall be used on all projects for documenting Competent Person designations. It must be filled out completely and updated as necessary by the contractor.
- 4.4 **Roles and Responsibilities**
 - 4.4.1 A Competent Person in Resolution is an employee who functions in a technical role when either Resolution self-performs associated field work (above) or oversees and directs the work of subcontractors. For operations where Resolution is providing oversight of subcontractors (ex. drilling services), it is the subcontractors employee who is the Competent Person on-site for that phase of operation.
 - 4.4.1.1 Any Resolution employee considered for designation as a "Competent Person" shall:
 - Complete a Training Needs Assessment (TNA) with their Supervisor under the guidance of the **Regional SH&E Manager**, regarding competent person's requirements;
 - Obtain approval from their supervisor prior to enrolling in any Resolution-sponsored safety competent person training program.
 - Track his or her own training anniversary dates and arrange for appropriate refresher training at least 30 days prior to expiration of certification
 - 4.4.1.2 Contractor Competent Persons
 - Unless Resolution is self-performing, the Contractor is responsible for determining the safe means and methods of its work activities.
 - The Contractor is responsible for designating its Competent Person(s) for each category of work it undertakes as required above.
 - The Contractor's Competent Person is responsible for technically supporting the Contractor's site operations for the safe execution of its activities.
 - The Contractor's Competent Person should be knowledgeable about the work activities, compliance with the associated safety and health regulations, identifying and removing any attendant field hazards and the Contractor's work practices and procedures.
 - For work on Resolution controlled sites, the **Project Manager** confirms that the Contractor designates a Competent Person(s) for its activities. *5-202-Competent Person Designation* or the equivalent may be use for this purpose.

- 4.4.2 **Project Manager/Field Task Manager/Supervisor** are responsible for ensuring that all assigned personnel, including personnel utilized from other offices to support their operations, comply with the requirements of this procedure. The **Project Manager** shall:
- Designate the Competent Person based on the work activity using 5-202- *Competent Person Designation*;
 - Implement corrective actions when employees fail to meet training requirements;
 - Identify supplemental employee training needs based on local/client requirements;
 - Verify competent person training requirements are reviewed with each employee, based upon current and anticipated job functions and past performance on a routine basis;
 - Identify additional employees requiring competent person training based on this procedure;
 - For projects controlled by Resolution, when these activities are contracted to another party, secure the identity of the Contractor's Competent Person(s), provide them with a copy of this SOP to verify the Contractor's capability to comply with the requirements within, and obtain documentation to support the designation of the Contractor employee as a Competent Person for Resolution;
 - Verify the designation of the Competent Person for a specific activity is effectively communicated to field personnel on site during daily tailgate safety meetings.
- 4.4.3 The **Regional SH&E Manager** or designee will work with operations to assess the competency of all designated persons based on specific requirements outlined in this procedure. With the **Project Manager** or designee determining the work-specific Competent Person, the **Regional SH&E Manager** provides guidance as needed. The SH&E Department (i.e., **Regional SH&E Manager**) with operations is responsible for:
- Establishing competent person training/experience requirements and communicating these requirements to line management.
 - Monitoring the overall implementation of this SOP.
 - Monitoring field compliance of this procedure.
 - Providing technical assistance/support as requested by **Regional and District Managers**.
 - Performing internal safety training classes as requested by **Regional and District Managers**.
 - Supporting the **Project Manager** in establishing minimum competent person requirements for regulated job activities based on individual job descriptions, applicable regulatory requirements, operational considerations, and management directives.
 - Reviewing and approving as requested by designated operations representatives the Competent Person's qualifications for Resolution employees.
 - Develop and maintain a process to track employee training compliance and anniversary dates.

5.0 Records

- 5.1 Resolution Competent Person Designation forms shall be maintained in the project file.
- 5.2 Documentation as to daily inspections and corrective measures by the Resolution Competent Person shall be maintained in the project file.

6.0 Attachments

- 6.1 5-202-Competent Person Designation Form

05-209-Project Hazard Assessment and Planning

1.0 Purpose and Scope

- 1.1 Resolution Consultants and its employees must assess all projects and sites for anticipated hazards and plan to mitigate those hazards through a series of controls. This procedure establishes the requirements and provides the tools for this process of pre-work planning and risk assessment.
- 1.2 The objective is to enhance SH&E performance, to reduce losses due to injury, illness, property damage, or environmental impairment incident, and maintain regulatory compliance.
- 1.3 This procedure applies to all Resolution Consultants employees and operations.

2.0 Terms and Definitions

- 2.1 **Task Hazard Analysis (THA):** A THA (*05-209-Form 1 Task Hazard Analysis*) is a technique for evaluating the component parts of any work method or procedure for the purpose of:
 - Identifying the SH&E hazards and risks connected with the work;
 - Identifying and implementing control methods to eliminate, nullify, or reduce to a minimum the consequences of such hazards and risks; and,
 - Evaluating the effectiveness of risk control measures and making modifications as needed.
- 2.2 **Plan:** A comprehensive document which outlines at length, in a report-style format, all of the operational controls necessary to mitigate the anticipated hazards for a project's sites and activities. Resolution Consultants will use two established planning templates:
 - **Health and Safety Plan (HASP)** for work involving environmental contaminants (e.g., HAZWOPER), or
 - **Safe Work Plan (SWP)** for all other SH&E planning documentation.
- 2.3 **High Risk Classification:** Any task where the identified hazard, if further controls are not implemented, has a combined severity and probability that is either catastrophic or very likely, or some combination thereof (but where the result is not minor or rare). (Refer to *05-209-Form 2 Hazard Identification, Classification and Controls* for further details.) The following may be classified as High Risk; consult the SH&E Department for clarification:
 - Confined space,
 - HAZWOPER,
 - Contaminated sites,
 - Radiation,
 - Lead,
 - Asbestos,
 - Resolution Consultants camp or construction sites,
 - Competent person requirements,
 - Sites with potential for client system failures,
 - Significant physical hazards (e.g., fall, water, equipment, etc.),
 - Munitions and Explosives of Concern / Unexploded Ordnance (MEC-UXO) Ops
 - Potential for significant environmental incident, or
 - Sites with medical surveillance requirements.

3.0 References

None.

4.0 Procedure

4.1 All projects must have a completed Task Hazard Analysis at a minimum. In addition, all field projects must have an Emergency Response Plan. These two documents may be all a project needs for administrative safety requirements, depending on the hazards identified.

4.2 The table below helps illustrate the further planning documentation which may be required, depending on the hazards identified in the THA.

Task Hazard Analysis	<ul style="list-style-type: none"> • Most basic requirement • All sites and tasks including walk-through site visits 	<ul style="list-style-type: none"> • Prepared by employees/supervisors • Confirmed by Project Manager or designee
Safe Work Plan (SWP)	<ul style="list-style-type: none"> • High risk activities • Complex projects with multiple stakeholders, long-duration • Non-HAZWOPER 	<ul style="list-style-type: none"> • SH&E Department review and guidance required
Health & Safety Plan (HASP)	<ul style="list-style-type: none"> • HAZWOPER regulated sites and all other sites with potential chemical exposures • Client directed 	<ul style="list-style-type: none"> • Only for sites with potential chemical exposures and Hazardous Waste Operations and Emergency Response (HAZWOPER) • SH&E Department review and guidance required

4.3 Task Hazard Analysis (THA)

4.3.1 A THA must be completed for all (routine and non-routine) tasks and sites.

4.3.2 A THA must be completed prior to the commencement of work so that all controls can be planned, equipment purchased/inspected, and staff adequately trained for the hazards.

4.3.3 The THA must identify all known and potential physical hazards as well as potential occupational exposures for noise, biological, or chemical contaminants, and environmental issues.

4.3.4 The assessment must include the identification and implementation of control measures to prevent worker injury, exposure and contamination.

4.3.5 Hazard identification and risk assessment must be ongoing. This requires the project team to consider the timing and frequency of the THA reviews, as affected by the following types of issues:

- The need to determine whether existing risk controls are effective and adequate,
- The need to respond to new hazards,
- The need to respond to changes that Resolution Consultants itself has made,
- The need to respond to feedback from monitoring activities, incident investigation, emergency situations or the results of testing of emergency procedures,
- Changes in legislation,
- External factors, e.g. emerging occupational health issues,
- Advances in control technologies,
- Changing diversity in the workforce, including contractors, or
- Changes proposed by corrective and preventive action.

4.3.6 THAs will be prepared by the supervisor and employee(s) directly responsible for the work.

4.3.7 Final drafts shall be submitted for review and approved by the **Project Manager** prior to commencing work activities.

4.3.8 Resolution Consultants subcontractors will prepare their own THA and submit them to the **Project Manager** for review and acceptance prior to the start of subcontracted work activities. These reviews are not approvals, and do not relieve the subcontractor for being responsible for their own safety on the project site.

4.3.9 The **Project Manager** shall maintain all approved/signed THA copies (including revisions) in the project files and make them available during project audits and for use during the training of new project personnel.

- 4.3.10 THAs shall be used to facilitate project SH&E tailgate meetings. Comments and suggestions relative to the completed THA shall be encouraged from attendees and incorporated into revised documents. Any modifications must be reviewed as corrective measures to confirm that no new hazards are created.
- 4.3.11 THAs that have been found to be inadequate or incomplete should be suitably annotated by the project management team to be used as lessons learned.
- 4.3.12 The THA will be reviewed by all personnel involved in the task, as well as any visitors or additional or new crews brought on to perform the work. This is a minimum of a one-time review and signature with supplement reviews conducted on a pre-determined basis by the **Project Manager** or their designee.
- 4.4 **Planning Documents**
- 4.4.1 An SH&E plan (in addition to the THA) may be required in the following circumstances:
- Tasks with high risk classification designations,
 - Tasks with medium risk classification designations, where circumstances warrant, and/or
 - Complex projects where it is necessary to communicate to numerous stakeholders and clearly define all controls including emergency response, incident reporting, inspections, security requirements, or other details.
- 4.4.2 The planning document shall be titled a **Safe Work Plan** UNLESS it involves Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements, then it will be called a **Health and Safety Plan (HASP)** and will clearly address the specific requirements associated with the hazardous waste exposures.
- 4.4.3 Specific plan needs will vary for each project. In some cases it may be acceptable to utilize general (non-site/non-project-specific) SH&E procedural documentation prepared for the type of work activities being performed, while in others project/site/activity-specific documentation is required to be developed as part of the project planning process. The specific operational needs of individual projects will be determined as part of the initial coordination between the **Project Manager** and the SH&E Department.
- 4.4.4 The following requirements apply to all Resolution Consultants SH&E planning documentation:
- Preparation of the SH&E documentation can be performed by a member of the project team or the SH&E Department.
 - All SH&E documentation (including draft versions of documents) will be approved by the SH&E Department prior to release for outside agency review (e.g., clients, regulatory agencies, etc) and prior to its field implementation.
 - All changes to approved SH&E documentation require concurrence from a designated member of the SH&E Department. This includes those made in response to changing field conditions or operational requirements and those made in response to regulator/client comments. Any written responses made to regulator/client comments also must be reviewed and approved by the SH&E Department.
 - The SH&E documentation for any project lasting twelve (12) months or longer will be reviewed at periodic intervals determined by the SH&E Department, but at least annually. The **SH&E Representative** will review the changes and determine whether modifications are required to the existing SH&E planning documentation. This confirms that the documentation continues to reflect the current project scope and knowledge of site conditions, and that any revised regulatory requirements are properly addressed. The **Project Manager** will provide a master copy of the SH&E documentation to be maintained on site for reference by personnel, together with copies of any required SH&E-related records or operational documentation. The master copy must be current in all respects, and will include any changes or modifications made as work progresses.
 - **Project Managers** will confirm that ALL plans and THAs have been reviewed with project personnel prior to implementation of field work. Sign-off and concurrence is mandatory and to be kept in the project records.

4.5 Roles & Responsibilities

4.5.1 SH&E Department responsibilities include the following:

- Assisting project management personnel to identify any necessary project-specific SH&E planning documentation required for all new and ongoing projects.
- Assisting in the preparation of necessary SH&E planning documentation.
- Reviewing and approving all SH&E planning documentation prior to its implementation for field activities.

4.5.2 Project Manager (or their designee) responsibilities include the following:

- Confirming the completion of SH&E planning documentation (THA, SWP or HASP), as required, that addresses the full range of project activities, safety risks and that all requirements and procedures are implemented and enforced during the field activities.
- Confirming SH&E requirements and Standard Operating Procedures are implemented successfully, including but not limited to:
 - Subcontractor evaluations
 - SH&E Training
 - Personal Protective Equipment
 - First aid and emergency response
 - Client requirements
- Contacting the SH&E Department to discuss SH&E planning documentation needs/ requirements at the start of each new project involving Resolution Consultants and at designated intervals (not to exceed one year) or when changes occur to the work operations or work location/ conditions, when work activities are modified/ changed, or when additional tasks are added to the work scope.
- Confirming that all SH&E planning documentation (draft or final) has been reviewed and approved by the SH&E Department prior to its use by Resolution Consultants personnel, or prior to release to outside agencies or organizations.
- Making appropriate resources available to protect the health and safety of Resolution Consultants employees, the environment and to comply with occupational health and safety, and environmental legislation and for the effective implementation of this procedure.

4.5.3 Employee responsibilities include the following:

- Participating in hazard identification training at the commencement of their employment with Resolution Consultants or prior to commencing field preparations.
- Reviewing and understanding the potential hazards and controls of the project before work commences.
- Complying with all required controls as identified in the THA and/or associated safety plans.

5.0 Records

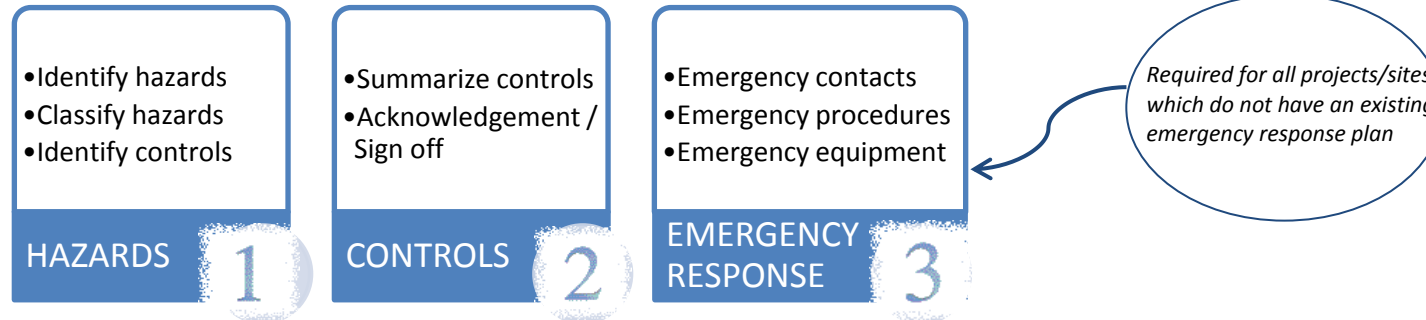
- 5.1 Completed THAs, SWPs, and HASPs will be filed in their appropriate project file.

6.0 Attachments

- 6.1 05-209-Form 1 Task Hazard Analysis
- 6.2 05-209-Form 2 Hazard Identification, Classification and Controls

05-209-Form 1 Task Hazard Analysis

This THA (worksheets 1 & 2) must be completed for all field work.



Hazard Identification

- **Natural (biological)** – bacteria, viruses, insects, plants, birds, and animals
- **Chemical** – exposure to chemical toxins, acute or chronic, by way of inhalation, ingestion or absorption
- **Physical** – slipping/tripping, being struck by moving objects, repetitive movement, strains from lifting
- **Environmental** – extreme heat or cold, noise, vibrations, magnetic fields, pressure extremes and air quality
- **Psychosocial** – stress, violence

Hazard Classification

- Considers the potential severity of the outcome
- Considers the likelihood of the occurrence
- Used to prioritize and determine extent of required controls

Controls

- **Elimination (first)** – choose a different process; modify an existing process; substitute with less hazardous substance
- **Engineering Controls (second)** – physically alter the plant or equipment design in order to circumvent possible hazards; place guards on machinery
- **Administrative Controls (third)** – change the job procedure and/or process; limit the amount of time an individual is in a hazardous environment through job rotation
- **Personal Protective Equipment (last option)** – provide employees with direct physical protection while working in a hazardous environment

Project Name:		Project Number:		Client:		
Supervisor:		Project Manager:		Location:		
THA Developed By:				Date:		
TASK HAZARD ANALYSIS		Task Name:		Regularity of Task: One-time <input type="checkbox"/> Routine <input type="checkbox"/>		
Job Event Sequence <i>(List the major steps of the individual task)</i>	Hazards <i>(List primary hazards)</i>	Hazard Classification <i>(before controls)</i>				Controls <i>(List controls that Resolution Consultants will implement)</i>
		Severity	Likelihood	Risk Level	Hazard Classification	
1				0		
2				0		
3				0		
4				0		
5				0		
6				0		
7				0		
8				0		
9				0		
10				0		

Hazard Classification Guidelines																																																					
<p style="text-align:center;">Severity</p> <p>1 Remote potential for injury, property damage/\$ loss, or env damage</p> <p>2 Potential for minor first aid injury, property damage/\$ loss, or environmental damage</p> <p>3 Potential for moderate personnel injuries, including medical treatment, property damage/\$ loss, environmental damage, or negative public impact</p> <p>4 Potential for a serious injury, major property damage/\$ loss, serious impact to the environment, and public health</p> <p>5 Catastrophic damage to people, property/equipment, environment, or public health</p>	<p style="text-align:center;">Likelihood of Occurrence</p> <p>1 Very unlikely</p> <p>2 Unlikely</p> <p>3 Likely</p> <p>4 Very likely</p> <p>5 Certain</p>	<p style="text-align:center;">Hazard Classification Matrix</p> <table style="margin: auto;"> <tr> <td colspan="2"></td> <td colspan="5" style="text-align:center;">Severity</td> <td></td> </tr> <tr> <td colspan="2"></td> <td style="background-color: #008000; color: white;">1</td> <td style="background-color: #008000; color: white;">2</td> <td style="background-color: #008000; color: white;">3</td> <td style="background-color: #008000; color: white;">4</td> <td style="background-color: #008000; color: white;">5</td> <td></td> </tr> <tr> <td rowspan="5" style="writing-mode: vertical-rl; transform: rotate(180deg); text-align: center;">Likelihood</td> <td style="background-color: #008000; color: white;">2</td> <td style="background-color: #008000; color: white;">4</td> <td style="background-color: #008000; color: white;">6</td> <td style="background-color: #008000; color: white;">8</td> <td style="background-color: #008000; color: white;">10</td> <td></td> </tr> <tr> <td style="background-color: #008000; color: white;">3</td> <td style="background-color: #008000; color: white;">6</td> <td style="background-color: #008000; color: white;">9</td> <td style="background-color: #008000; color: white;">12</td> <td style="background-color: #008000; color: white;">15</td> <td></td> </tr> <tr> <td style="background-color: #008000; color: white;">4</td> <td style="background-color: #008000; color: white;">8</td> <td style="background-color: #008000; color: white;">12</td> <td style="background-color: #008000; color: white;">16</td> <td style="background-color: #008000; color: white;">20</td> <td></td> </tr> <tr> <td style="background-color: #008000; color: white;">5</td> <td style="background-color: #008000; color: white;">10</td> <td style="background-color: #008000; color: white;">15</td> <td style="background-color: #008000; color: white;">20</td> <td style="background-color: #008000; color: white;">25</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <div style="margin-top: 10px;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr><td style="text-align:center;">Risk Level</td></tr> <tr><td style="background-color: #008000; color: white; text-align:center;">Low</td></tr> <tr><td style="background-color: #FFD700; color: black; text-align:center;">Medium</td></tr> <tr><td style="background-color: #FF0000; color: white; text-align:center;">High</td></tr> </table> </div> <p style="text-align: center; margin-top: 10px;">Risk Level = Likelihood x Severity</p>			Severity								1	2	3	4	5		Likelihood	2	4	6	8	10		3	6	9	12	15		4	8	12	16	20		5	10	15	20	25								Risk Level	Low	Medium	High
		Severity																																																			
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		Project Name:		Project Number:		Client:	
		Supervisor:		Project Manager:		Location:	
		THA Developed By:				Date:	
		Task Name:					
SUMMARY OF CONTROLS							
Personal Protective Equipment <i>(check all that apply)</i>		Air Monitoring (reference HASP monitoring plan)					
CSA/ANSI Safety-Toed Boots (Leather or Rubber) <input type="checkbox"/> No air monitoring required <input type="checkbox"/> Air monitoring required (see procedures below) <input type="checkbox"/>							
		Parameter		Location/Monitoring Interval		Response/Action Levels	
CSA/ANSI Safety Glasses or Goggles							
CSA/ANSI-approved Hard Hat							
CSA/ANSI Type II/III Reflective Traffic Safety Vest							
Required Training (associated with this THA)		Key SOPs (associated with this THA)		Client & Other Requirements			
1							
2							
3							
4							
5							
6							
Acknowledgement / Signatures							
Project Manager / Supervisor (signature):				Date:			
Name	Signature	Company	Date	Name	Signature	Company	Date

		Project Name:		Project Number:		Client:	
		Supervisor:		Project Manager:		Location:	
		THA Developed By:				Date:	
EMERGENCY RESPONSE PLAN		Task Name:		Regularity of Task: <input type="checkbox"/> One-time <input type="checkbox"/> Routine			
Check-in Procedures							
Check-in Times		Check-in Person		Phone Number		Cell Phone Number	
Alternate:							
Emergency Coordinators / Key Personnel							
Name		Title		Phone Number		Cell Phone Number	
		On-site First Aid Attendant					
		Project Manager					
		Site Supervisor					
		Regional SH&E Manager					
		Incident Reporting Line					
		Client Contact					
Emergency Agencies / Public Utilities							
Name		Type		Details		Phone Number	
		Police					
		Fire					
		Ambulance					
		Nearest Hospital / Clinic					
		Poison Control Center					
		Pollution / Environmental					
Emergency Equipment & Supplies				Other Emergency Plan Details			
<input type="checkbox"/> First Aid Kit - Type:		<input type="checkbox"/> Eye Wash					
<input type="checkbox"/> Blankets / Survival:		<input type="checkbox"/> Spill Kit					
<input type="checkbox"/> Fire Extinguishers Type:		<input type="checkbox"/> Other:					
<input type="checkbox"/> Communication Device							
<input type="checkbox"/> Vehicle Safety Equipment							

05-209 Form 2 Hazard Identification, Classification & Controls

The following information is intended to guide staff in completing the Task Hazard Analysis.

1.0 Hazard Identification

1.1 Hazards occurring in the workplace may be:

- Natural (biological) – bacteria, viruses, insects, plants, birds, and animals
- Chemical – exposure to chemical toxins, acute or chronic, by way of inhalation, ingestion or absorption
- Physical – slipping/tripping, being struck by moving objects, repetitive movement, strains from lifting
- Environmental – extreme heat or cold, noise, vibrations, magnetic fields, pressure extremes and air quality
- Psychosocial – stress, violence

1.2 When identifying hazards, remember to consider the following:

- Routine and non-routine activities;
- Activities of all persons having access to the workplace (including contractors and visitors);
- Human behavior, capabilities and other human factors;
- Identified hazards originating outside the workplace capable of adversely affecting the health and safety of persons under the control of Resolution Consultants;
- Hazards created in the vicinity of the workplace by work-related activities under the control of Resolution Consultants;
- Infrastructure, equipment and materials at the workplace, whether provided by Resolution Consultants or others;
- Changes or proposed changes within Resolution Consultants;
- Modifications to the OH&S management system, including temporary changes, and their impacts on operations, processes, and activities;
- Any applicable legal obligations relating to risk assessment and implementation of necessary controls;
- The design of work areas, processes, installations, machinery/equipment, operating procedures and work organization, including their adaptation to human capabilities.

1.3 It is often useful to break the job or task down into a sequence of steps (“Job Event Sequence”) to help identify the primary hazards which may be encountered when you complete a job task. The “events” identified should be only as detailed as required to identify the primary hazards (e.g., drive to worksite; inspect bridge decking; take water samples, etc.)

2.0 Hazard Classification

Once identified, all hazards should be classified based on both their potential outcome and the probability of its occurrence as follows:

2.1 **Severity**

- Insignificant – no injuries, low environmental/financial impact = 1
- Minor – first aid required, some environmental/financial impact = 2
- Moderate – medical treatment required, contained environmental impact, high cost = 3
- Major – serious injury, severe environmental damage, major cost = 4

- Catastrophic – death, environmental disaster, extensive damage, extended downtime for company or site, huge cost = 5

2.2 Probability

- Unlikely – Incident will probably not occur during the work activity = 1
- Rarely – Incident will rarely occur during the work activity = 2
- Possibly – Possibility of incident occurring sometime during the work activity = 3
- Likely – Likelihood of incident occurring sometime during the work activity = 4
- Very Likely – Likelihood of incident happening often during course of the work activity = 5

2.3 High Hazard – Practice or condition whose sum of severity and probability is greater than or equal to 8.

2.4 Medium Hazard – Practice or condition whose sum of severity and probability is equal to either 6 or 7.

2.5 Low Hazard – Practice or condition whose sum of severity and probability is less than or equal to 5.

2.6 Inputs to the hazard classification can include, but are not be limited to, information or data on the following:

- Details of location(s) where work is carried out,
- The proximity and scope for hazardous interaction between activities in the workplace,
- Security arrangements,
- The human capabilities, behavior, competence, training and experience of those who normally and/or occasionally carry out hazardous tasks,
- Toxicological data, epidemiological data and other health related information,
- The proximity of other personnel (e.g. cleaners, visitors, contractors, the public) who might be affected by hazardous work,
- Details of any work instructions, systems of work and/or permit-to-work procedures, prepared for hazardous tasks,
- Manufacturers' or suppliers' instructions for operation and maintenance of equipment and facilities,
- The availability and use of control measures (e.g. for ventilation, guarding, personal protective equipment (PPE), etc.),
- Abnormal conditions (e.g. the potential interruption of utility services such as electricity and water, or other process failures),
- Environmental conditions affecting the workplace,
- The potential for failure of plant and machinery components and safety devices or for their degradation from exposure to the elements or process materials,
- Details of access to, and adequacy/condition of emergency procedures, emergency escape plans, emergency equipment, emergency escape routes (including signage), emergency communication facilities, and external emergency support, etc.,
- Monitoring data related to incidents associated with specific work activities,
- The findings of any existing assessments relating to hazardous work activity,
- Details of previous unsafe acts either by the individuals performing the activity or by others (e.g. adjacent personnel, visitors, contractors, etc.),
- The potential for a failure to induce associated failures or disabling of control measures,
- The duration and frequency at which tasks are carried out,
- The accuracy and reliability of the data available for the risk assessment,

- Any legal and other requirements which prescribe how the risk assessment has to be performed or what constitutes an acceptable risk, e.g. sampling methods to determine exposure,
- Use of specific risk assessment methods, or permissible exposure levels.

2.7 Considering all of the hazards associated with the job task (and using the Hazard Matrix), provide an overall classification for the job/task in the Task Hazard Analysis. This classification can be used as a guideline for prioritizing and determining the level and number of controls required.

Hazard classification matrix

Severity	Probability					
		Very Likely	Likely	Possibly	Rarely	Unlikely
		5	4	3	2	1
Catastrophic (death, environmental disaster, extensive damage, extended downtime for company or site, huge cost)	5	10	9	8	7	6
Major (serious injury, severe environmental damage, major cost)	4	9	8	7	6	5
Moderate (medical treatment required, contained environmental impact, high cost)	3	8	7	6	5	4
Minor (First aid required, some environmental/financial impact)	2	7	6	5	4	3
Insignificant (no injuries, low environmental/financial impact)	1	6	5	4	3	2

Probability: How likely is it to happen?

Very Likely	Likelihood of incident happening often during course of the work activity
Likely	Likelihood of incident occurring sometime during the work activity
Possibly	Possibility of incident occurring sometime during the work activity
Rarely	Incident will rarely occur during the work activity
Unlikely	Incident will probably not occur during the work activity

Hazard Classification:

	HIGH
	MED
	LOW

3.0 Hazard Control

Once identified and classified, all hazards must have an effective means of control which can be accomplished by using one or more of the following means of control:

3.1 Elimination (first)

- Choose a different process
- Modify an existing process
- Substitute with less hazardous substance

3.2 Engineering Controls (second)

- Physically alter the plant or equipment design in order to circumvent possible hazards
- Place guards on machinery
- Construct catwalks to divert traffic from hazardous areas

3.3 Administrative Controls (third)

- Affect the job procedure and/or process in order to reduce hazards
- Implement rules to change unsafe behaviors
- Limit the amount of time an individual is in a hazardous environment through job rotation

3.4 Personal Protective Equipment (fourth)

- Provide employees with direct physical protection while working in a hazardous environment

All identified hazards must have an effective means of control to minimize the potential for an incident; however, hazards with higher classifications should be addressed first and will undoubtedly require a variety of the types of controls mentioned above.

5-507-Hazardous Materials Communication / WHMIS

1.0 Purpose and Scope

- 1.1 Provides a Hazard Communication Program so that Resolution employees are informed of the hazards of the chemicals to which they may be exposed in the course of their work by way of container labeling and other forms of warning, material safety data sheets (MSDS), and employee training.
- 1.2 This procedure applies to all Resolution JV Partner employees and operations.
- 1.3 The program applies to the use of any hazardous substances which are known to be present in the workplace in such a manner that employees may be exposed under normal conditions of use or in a foreseeable emergency.

2.0 Terms and Definitions

A complete list of definitions can be found in their entirety in the HMR, the TDG Regulations, and the IATA DGR.

- 2.1 **Acute Effect:** An adverse effect on the human body with immediate onset of symptoms.
- 2.2 **Article:** A manufactured item: (1) which is formed to a specific shape or design during manufacture; (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use; and, (3) which does not release or otherwise result in exposure to, a hazardous chemical, under normal conditions of use.
- 2.3 **Carcinogen:** Those chemicals appearing in any of the following reference sources are established as carcinogens for hazard communication purposes:
 - National Toxicology Program (NTP) Annual Report on Carcinogens.
 - International Agency for Research on Cancer (IARC) Monographs, Volumes 1-34. Note: The Registry of Toxic Effects of Chemical Substances published by NIOSH indicates whether a substance has been found by NTP or IARC to be a potential carcinogen.
- 2.4 **Chemical Name:** The scientific designation of a substance in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry or the system developed by the Chemical Abstracts Service.
- 2.5 **Chronic Effect:** An adverse effect on the human body with symptoms which develop slowly over a long period of time or which frequently recur.
- 2.6 **Combustible Liquid:** Any liquid having a flash point at or above 100°F (37.8°C) but below 200°F (93.3°C), except any mixture having components with flash points of 200°F (93.3°C), or higher, the total volume of which makes up 99% or more of the total volume of the mixture.
- 2.7 **Common Name:** Any designation or identification such as code name, code number, trade name or brand name used to identify a substance other than by its chemical name.
- 2.8 **Container:** Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank or the like that contains a hazardous chemical. For purposes of this Safety Operating Procedure (SOP) and Occupational Safety and Health Administration (OSHA) standard, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle are not considered to be containers.
- 2.9 **Establishment:** Any separate and distinct Resolution office, laboratory or other company facility.
- 2.10 **Exposure:** Any situation arising from work operations where an employee may ingest, inhale, absorb through the skin or eyes or otherwise come into contact with a hazardous substance.
- 2.11 **Flammable:** A substance that falls into one of the following categories:
 - **Flammable Aerosol:** An aerosol that when tested by the method described in 16 CFR 1500.45, yields a flame projection exceeding 18 inches at full valve opening or flashback (a flame extending back to the valve) at any degree of valve opening;
 - **Flammable Gas:** A gas that at ambient temperature and pressure:

- Forms a flammable mixture with air at a concentration of 13% of volume or less; or
 - Forms a range of flammable mixtures with air wider than 12% by volume, regardless of the lower limit.
 - **Flammable Liquid:** Any liquid having a flash point below 100°F (37.8°C), except any mixture having components with flash points of 100°F (37.8°C) or higher, the total of which make up 99% or more of the total volume of the mixture.
 - **Flammable Solid:** A solid, other than a blasting agent or explosive as defined in 8 CCR 5237(a), that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change or retained heat from manufacturing or processing or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.
 - A chemical shall be considered to be a flammable solid if, when tested by the method described in 16 CFR 1500.44, it ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis.
- 2.12 **Flash Point:** Minimum temperature of a liquid at which it gives off sufficient vapors to form an ignitable mixture with the air near the surface of the liquid or within the container used.
- 2.13 **Hazardous Chemical:** Those chemicals appearing in any of the following reference sources are established as hazardous chemicals for hazard communication purposes.
- 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, OSHA.
 - Hazardous Products Act, R.C.S. 1985, c. H-3, section 2, Canada
 - For operations within the state of California, the list of hazardous substances prepared by the California Director of Industrial Relations pursuant to Labor Code Section 6382. The concentrations and footnotes, which are applicable to the list, shall be understood to modify the same substance on all other source lists or hazard determinations set forth in § 8 CCR 5194(d)(3)(B) and (d)(5)(D).
- 2.14 **Hazardous Substance:** A hazardous chemical or carcinogen, or a product or mixture containing a hazardous chemical or carcinogen provided that:
- The hazardous chemical is 1% or more of the mixture or product or 2% if the hazardous chemical exists as an impurity in the mixture; or
 - The carcinogen is 0.1% or more of the mixture or product.
 - Manufacturers, importers and distributors will be relied upon to perform the appropriate hazard determination for the substances they produce or sell.
- 2.15 The following materials are not covered by the Hazard Communication Standard:
- Any hazardous waste as defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended (42 USC 6901 et seq.) when subject to regulations issued under that act by the Environmental Protection Agency.
 - Tobacco or tobacco products
 - Wood or wood products. Note: Wood dust is not exempt since the hazards of wood dust are not "self-evident" as are the hazards of wood or wood products
 - Consumer products (including pens, pencils, adhesive tape) used in the work place under typical consumer usage
 - Articles (i.e. plastic chairs)
 - Foods, drugs, or cosmetics intended for personal consumption by employees while in the work place
 - Foods, drugs, cosmetics in retail store packaged for retail sale
 - Any drug in solid form used for direct administration to the patient (i.e., tablets or pills)

- 2.16 **Hazardous Substance Inventory (HSI):** A listing of all chemicals stored or used at an office or project site. Note that the HSI may be imbedded in a project Health and Safety Plan.
- 2.17 **Immediate Use:** Means that the hazardous chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.
- 2.18 **MSDS:** A material safety data sheet prepared pursuant to state and federal regulations, OSHA Form 174 and Canada regulations (Controlled Products regulations, schedule 1).
- 2.19 **MSDS Administrator:** The individual designated by the Office Manager to maintain the additional establishment-specific HSI and the MSDS binder required if that establishment uses or stores hazardous substances.
- 2.20 **NFPA:** A system of categories, colors and numbers was created to provide basic hazard information. It enables firefighters and other emergency personnel to easily decide whether or not to evacuate an area or proceed with emergency control operations. The three principal categories of identification are Health, Flammability and Instability. A numerical range of "0 to 4" indicates the severity of the hazard. A "4" indicates the most severe and a "0" indicates a minimal hazard.
- 2.21 **Mixture:** Any solution or intimate admixture of two or more substances which do not react chemically with each other.
- 2.22 **Reactivity:** A measure of the tendency of a substance to undergo chemical reaction with the release of energy.
- 2.23 **Solubility:** The ability of substance to blend and mix uniformly with another.
- 2.24 **Specific Gravity (density):** Ratio of the weight of a substance to the weight of the same volume of another substance. As used in this directive, specific gravity or density refers to the weight of substance as compared to the weight of an equal volume of water.
- 2.25 **Vapor Density:** The weight of a vapor-air mixture resulting from the vaporization of a volatile liquid at equilibrium temperature and pressure conditions, as compared with the weight of an equal volume of air under the same conditions.
- 2.26 **WHMIS:** The Workplace Hazardous Materials Information System (WHMIS) is Canada's national hazard communication standard. The key elements of the system are cautionary labelling of containers of WHMIS "controlled products", the provision of material safety data sheets (MSDSs) and worker education and training programs.

3.0 References

None.

4.0 Procedure

- 4.1 All employees have a right to, and should, know the properties and potential hazards of substances to which they may be exposed.
- 4.2 Should Resolution assign employees that do not read and speak English to tasks with chemical exposures, communications will be provided in the language understood by that employee.
- 4.3 **Hazardous Waste Exemption**
- 4.3.1 In the U.S., hazardous wastes are excluded from the state and federal Hazard Communication standards. However, Resolution employees who handle or are otherwise exposed to hazardous wastes are covered by the requirements of the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard at 29 CFR 1910.120 – Hazardous Waste Operations And Emergency Response. This standard requires that:
- Employees receive 40-hour initial and 8-hour annual SH&E training; and that
 - Information on the hazards of hazardous wastes be documented in a site-specific Health and Safety Plan (HASP) and communicated to all employees in site-specific briefing on-site training required by the standard.

- 4.3.2 Therefore, Resolution HAZWOPER projects are not required to comply with the requirements of this SOP as they relate to the hazardous wastes that are present at those project sites.
- 4.3.3 A Resolution's HASP requirements are specified in *5-509-Hazardous Waste Operations and Emergency Response*.
- 4.4 **Hazardous Substance Inventory**
- 4.4.1 Establishment-Specific HSI
- If an Resolution establishment uses or stores additional hazardous substances, an establishment-specific HSI must be maintained at that establishment.
 - If it is determined that an office-specific HSI is needed, the Resolution **Office Manager** shall assure that one is developed and maintained by someone appointed as the establishment's MSDS Administrator.
 - The content of the office-specific written inventory shall be updated as new hazardous substances are procured for, or removed from, the establishment and shall be verified by the **Regional SH&E Manager** through regular inspections of the establishment.
 - In order to meet the 30-years-after-employment-termination record retention requirement, the office-specific HSIs shall be treated as a permanent record.
- 4.5 **Material SAFETY Data Sheets**
- 4.5.1 Establishment-Specific MSDS Inventory
- If it is determined that an Resolution establishment is required to maintain an establishment-specific HSI ,MSDSs for those specific hazardous substances must be maintained on file at that establishment.
 - The **Regional SH&E Manager** shall audit the local office program for MSDS request and maintenance and report deficiencies to the appropriate management level, as necessary, to assure compliance with this SOP.
- 4.5.2 Field Project Sites and Client Facilities
- The **Project Manager** and/or the **Site Safety Officer** shall access or obtain, and maintain copies of MSDS from:
 - All Resolution subcontractors bringing chemicals onto the project site; and
 - The client, for all of the client's chemicals to which Resolution or Resolution subcontract employees are potentially exposed.
- 4.5.3 Employee Access to MSDSs
- MSDSs should be maintained at the local establishment that uses that hazardous substance. Copies of the MSDS should be made available to the employee upon request to the office's MSDS Administrator.
- 4.5.4 Field Access to MSDSs
- When hazardous substances are brought into the field, the user must assure that a copy of the MSDS for that substance accompanies it and is available at the field location where it is to be used.
- 4.5.5 MSDSs for Resolution Products
- It is unlikely that Resolution activities would create a chemical for which a new MSDS were needed. If such a chemical were created, the Corporate SH&E Department shall work with the appropriate operations groups to draft, review, and publish the new MSDS.
- 4.5.6 Content of the Material Safety Data Sheet
- As a minimum, the MSDS must contain the following information:
 - The name, address, and telephone number of the source of the product or material, preferably those of the manufacturer
 - The trade name and synonyms of the product or material

- Chemical names of hazardous ingredients, including, but not limited to, those in mixtures
- An indication of the percentage, by weight or volume, which each ingredient of a mixture bears to the whole mixture
- Physical data pertaining to the product or material, including boiling point (in °F); vapor pressure (in mm of mercury); vapor density of gas or vapor (air = 1); solubility in water (in percent by weight); specific gravity of material (water = 1); percentage volatile by volume (at 70 °F); evaporation rate for liquids (either butyl acetate or ether may be taken as 1); and appearance and odor
- Fire and explosion hazard data pertaining to the product or material, including flash point (in °F); flammable limits (in percent by volume in air); suitable extinguishing media or agents; special fire fighting procedures; and unusual fire and explosion hazard information
- Health hazard data pertaining to the product or material, including exposure limits, effects of overexposure and medical conditions aggravated by exposure, and emergency and first-aid procedures
- Reactivity data, including stability, incompatibility, hazardous decomposition products, and hazardous polymerization
- Procedures to be followed and precautions to be taken in cleaning up and disposing of materials leaked or spilled
- Special protection information, including use of personal protective equipment, such as respirators, eye protection, and protective clothing, and ventilation or other control measures
- Special precautionary information about handling and strong
- Any other general precautionary information
- MSDSs that do not contain this information shall be returned to the distributor or manufacturer to be updated.

4.5.7 Trade Secrets

- Some hazardous substance suppliers may claim the information requested on MSDSs is proprietary and not provide the information to Resolution.
- When MSDSs supplied to the Resolution Regional SH&E Manager indicate that proprietary information has been withheld, the Regional SH&E Manager will either obtain the necessary information to make a hazard assessment or reject the material for use within Resolution.

4.6 Labeling

4.6.1 Containers of hazardous substances used or stored in each Resolution establishment must be labeled, tagged or marked with the following information:

- Identification of the hazardous substance(s)
- Appropriate hazard warnings
- Name and address of the manufacturer, importer or other responsible parties
- Safe Handling Instructions
- Statement that an MSDS is available for the product

4.6.2 Labels on containers shall not be removed or defaced. Labels or other forms of warning shall be legible, in English and French (Canada), and prominently displayed on the container.

4.6.3 Any failure to have the appropriate labeling information on a container at any time will be cause to suspend use of the product until the container is properly labeled.

4.6.4 Carcinogen Labeling

- Chemicals which have been indicated as positive or suspect carcinogens by either OSHA, ACGIH, the International Agency for Research on Cancer (IARC) (World Health Organization), or the National Toxicology Program (NTP) will be considered to be carcinogenic for purpose of the HCS. Those chemicals identified as being “known to be carcinogenic” by NTP must have carcinogen warnings on the label and information on the MSDSs.

4.6.5 Stationary Process Containers

- If there is stationary process equipment within a work area, signs, placards, process sheets, batch tickets, operating procedures, or other such written materials may be used in lieu of fixed labels on the containers, as long as the alternative method conveys the appropriate hazard information. The written materials shall be readily accessible to the employees in the work area.

4.6.6 Portable Containers

- Portable containers of hazardous substances need not be labeled when the substance is transferred from labeled containers and is intended for immediate use of the employee who performs the transfer.
- Containers of hazardous substances transferred from labeled containers and not intended for the immediate use of the employee performing the transfer shall be labeled with the chemical name and a hazard warning label in accordance with the National Fire Protection Association's (NFPA) 704M Hazard Identification System shall be attached.

4.7 Chemical Storage

4.7.1 Hazardous chemicals are to be stored in their original, labeled containers with the lids securely closed and taped if possible. Flammable and combustible materials must be stored in fire impervious cabinets in designated stockroom areas. Chemicals must be stored in compliance with instructions provided on their labels, MSDS, or the manufacturer's specifications.

4.7.2 All hazardous chemicals must be stored in a manner that prevents spillage and leakage from exposing people or the environment to the chemical.

4.7.3 Hazardous chemicals shall not be stored with foods or beverages. Food and beverages shall not be consumed in areas where hazardous chemicals are used or stored.

4.8 Chemical Use in Offices

4.8.1 In general, hazardous substances should not be taken into office areas, conference rooms, or break areas. If this general requirement is infeasible, contact the SH&E Department for guidance.

4.8.2 General exceptions to this rule are the following:

- Liquid paper
- Toner
- Cleaners
- Isobutylene calibration gas
- pH calibration solutions for instruments

4.9 Employee Information and Training

4.9.1 Each Resolution employee who handles or is exposed to hazardous substances must be provided information and training on hazardous substances in their work area.

- At the time of their initial assignment
- Whenever a new hazard is introduced into their work area

4.9.2 As a minimum, the training requirements apply to Resolution personnel in the following job categories:

- All personnel who perform field work that involves the use of, or potential exposure to, hazardous substances
- Laboratory Employees

4.10 Initial Training Content

4.10.1 The Initial Training will provide instruction in the following:

- Methods and observations that may be used to detect the presence or release of a hazardous substance in the work area (such as personal monitoring, visual appearance or odor of hazardous substances being released, etc.);

- The physical and health hazards of substances in the work area and measures and procedures Resolution has implemented to protect employees; and
 - The details of this hazard communication program (SOP), including an explanation of the labeling system and the MSDS, and how he/she can obtain and use appropriate hazard information.
- 4.10.2 The Initial Training will also inform the employee of the following:
- Any operations in their work area in which hazardous substances are present
 - Location and availability of this written hazard communications program (SOP)
 - Their right to personally receive information regarding hazardous substances to which they may be exposed
 - Their right to have their physician receive information regarding hazardous substances to which they may be exposed
 - Their right against discharge or other discrimination (in California) due to the employee's exercise of rights afforded pursuant to provisions of the California Hazardous Substances Information and Training Act
- 4.11 **Periodic Training and Training for Non-Routine Tasks**
- 4.11.1 Additional training will be provided to employees who have received initial training whenever:
- A new hazardous substance is introduced into their work area
 - A new or revised MSDS is received, which indicates significantly increased risks to employee health as compared to those stated on the previous MSDS
 - Non-routine tasks are performed, which will potentially result in exposure to hazardous substances, or exposure under circumstances, which were not addressed during initial training
- 4.11.2 Supervisors, in coordination with their **Regional SH&E Manager**, shall provide such training through an explanation of the information on the contents of the MSDS for that substance.
- 4.11.3 When training their employees, supervisors shall explain:
- Any health hazards associated with use of the substance or mixture
 - Proper precautions for handling
 - Necessary personal protective equipment or other safety precautions to prevent or minimize exposure
 - Emergency procedures for spills, fire, disposal, and first aid
- 4.11.4 For most projects involving field work, this periodic training requirement will be facilitated through the implementation of the site specific HASP that has been developed for the project.

4.12 **Documentation of Initial and Periodic Training**

- 4.12.1 All training required by this SOP shall be documented at the time it is performed by having the employee sign a copy of a training attendance sheet.

4.13 **Chemical Usage**

- 4.13.1 Prior to using any chemical, a Task Hazard Analysis (THA) shall be completed by the employees assigned to use the chemical. The analysis will identify the hazards associated with the tasks to be performed and prescribe the Personal Protective Equipment (PPE) to be used.

4.14 **Office Specific Written Program**

- 4.14.1 Each office or location using or storing hazardous materials will develop a written office/ location-specific Hazard Communication/WHMIS Program. If the local office decides to implement the requirements of the standard in any way that differs from this procedure, they shall verify the changes with the SH&E department, document the changes, and communicate the differences to all affected employees.
- 4.14.2 For Canadian operations, all relevant MSDS must be current (no more than 3 years) and readily available (in French and English) for all hazardous materials.

4.15 **Canada-specific**

- 4.15.1 Consumer products are exempt from supplier labels and MSDS requirements. Some cleaning solvents may be packaged as consumer products and these must be labelled in accordance with the Consumer Product Act requirements.
- 4.15.2 In addition to the labelling of storage containers in the workplace, the contents of process piping (including valves), process vessels and reaction vessels are required to be identified through the use of colour coding, labels, placards or other modes of identifications that must be communicated to workers through training programs. It is very important for employees to be aware of and understand Client labelling requirements for these types of process systems.

4.16 **Roles and Responsibilities**

4.16.1 **Regional SH&E Managers will:**

- Audit their regional offices to assure that they maintain an establishment-specific Hazardous Substance Inventory (HSI).
- Audit their regional offices to assure that if an establishment-specific HSI is required, that MSDSs are available for each substance listed on the HSI.
- Provide interpretation of MSDSs and hazard information for HMIS labels/NFPA labels and other information to assist in training employees.
- Provide hazard communication training to Resolution employees and file documents of this training in the Corporate SH&E office.
- Review MSDS for adequacy of completion to meet the OSHA and Canadian standard and returning them to supplier, if necessary.

4.16.2 **Office Managers will:**

- Have an operations-specific, written hazard communication program which at least describes how the requirements of this Procedure and the US OSHA and Canadian Hazard Communication requirements for labels and other forms of warning, material safety data sheets, and employee information and training will be met.
- Appoint an MSDS administrator for their establishment if they store or use hazardous substances.
- Confirm, if required, that the MSDS Administrator maintains an HSI for their establishment.
- Confirm that MSDS are available for all substances listed on their establishment's HSI.
- Confirm that a copy of this Procedure and the site-specific MSDS are available to all employees. Employees shall be instructed in the location of this Procedure and the MSDS.
- Confirm that all employees in their office affected by the HAZCOM standard are provided with the appropriate training, including new employees.

4.16.3 **Project Managers (field task managers, supervisors) will:**

- Confirm that all employees under their supervision have received the initial and periodic training required by this SOP prior to assigning employees to tasks involve the use of, or potential exposure to, hazardous substances.
- Notify employees of hazardous substances covered by this SOP that are used in their work area.
- Determine the potential fire, toxic, or reactivity hazards which are likely to be encountered in the handling or utilization of a hazardous substance and will communicate this information to their affected employees, before any are permitted to work with it.
- Confirm that an MSDS is available for each hazardous substance used, or potentially encountered, in the work areas or on the projects that are under their supervision.
- Notify subcontractors (working for Resolution) of any hazardous substances that are used or stored by Resolution to which the subcontractor's employees may be exposed.
- Notify clients or property owner/operators of chemicals brought onto their property by Resolution or Resolution's subcontractors.
- Request MSDSs from all subcontractor organization for the relevant chemicals they bring onto an Resolution controlled site.

4.16.4 **Employees will:**

- Confirm that they have received appropriate hazard communication training prior to working with materials that fall under the standard.
- Only work with materials for which they have been instructed on how to find an MSDS and how to work with that material safely.
- Provide a copy of all MSDSs received to the MSDS Administrator at their facility.
- Verify that an MSDS is available in their work area for each hazardous substance that they use.
- Confirm that containers of hazardous substances that they use are properly labeled.

5.0 **Records**

None.

6.0 **Attachments**

None.

5-603-Incident Investigation and Review

1.0 Purpose and Scope

- 1.1 Provide that all SH&E incidents are investigated in a timely and thorough manner. For all recordable, serious and fatalities, provide a formal incident investigation process.
- 1.2 Additionally, ensure that appropriate Lessons Learned are gathered from all SH&E incidents and that information is shared regarding lessons learned throughout the organization.
- 1.3 This procedure applies to all Resolution Consultants employees and operations.

2.0 Terms and Definitions

- 2.1 **Responsible Lead Investigator (RLI):** Manager responsible for the incident investigation.
- 2.2 **SRI:** Supervisor's Report of Incident .
- 2.3 **SH&E Incidents:** A potentially work-related event which is unplanned, possibly harmful or damaging, and which may result in personal injury, environmental impact, or loss or may impact the reputation of Resolution Consultants or its clients or may result in an investigation by a regulatory agency or insurer.

3.0 References

- 3.1 5-004-Incident Reporting

4.0 Procedure

4.1 Initial post-incident response procedure by office/project team as it relates to an incident investigation and review

- 4.1.1 Immediate steps to be taken by local field/office personnel:
 - Confirm corrective actions that have been put in place to eliminate or control identified hazards at the scene.
- 4.1.2 Secure the area. Do not disturb the scene until relevant facts are obtained unless an immediate hazard exists.
- 4.1.3 Prepare appropriate sketches and or obtain photographs of the incident scene and gather relevant information from the scene (Who, What, Where, When and other "environmental factors" that may have had an influence on the incident).
- 4.1.4 Interview witnesses and document responses as soon as possible at the scene of the incident.

4.2 Follow-up Investigation

4.2.1 Identify Responsible Lead Investigator and Formation of Team.

- The **Responsible Lead Investigator (RLI)** An appropriate team member will be designated to be the RLI for any investigation covered by this procedure. That determination will be made based off of technical capabilities, relevant work experience, and the ability to demonstrate critical thinking skills.
- The **RLI** shall contact Resolution Consultants SH&E Manager to ask if legal counsel will be needed in the investigation. If so, the incident investigation report will be marked as "Attorney Privileged Communication."

The RLI will appoint an appropriate team to conduct and document the required investigation.

4.2.2 Investigation Team Procedures

- The team will follow an appropriate investigation technique (as agreed to by the **RLI**, **Resolution Consultants SH&E Manager** and Resolution Consultants in-house counsel) to determine the following:
 - Sequence of events leading up to the incident and steps followed immediately following the incident that may have had an impact on the final outcome.
 - Identification of the People, Parts/Equipment, Position and Paper/Documentation factors involved in the incident.
 - Determination of direct cause(s) and root causes using techniques agreed to by the **RLI** and **Resolution Consultants SH&E Manager**. (Note: Example root cause investigation tools include “5 Why’s”, TapRoot, Fishbone Diagram, etc.).
- The Investigation Team will prepare a preliminary report, signed by the **RLI**, documenting all findings and recommended corrective actions within 10 business days following the incident. If necessary, the report shall be prepared at the direction of in-house counsel and shall be marked “Attorney Privileged Communication”.
- An Investigation Review Call will be held to review the preliminary investigation report. Required participants for the call will include:
 - **Responsible Lead Investigator**.
 - Responsible Supervisor or **Project Manager** of the injured/involved employee.
 - Resolution Consultants **SH&E Manager**.
 - Resolution Consultants **Legal Counsel**, when required.
 - Additional personnel as deemed necessary by the Resolution Consultants Management Committee.
- Note: Incident Review Calls are designed to summarize the preliminary investigation findings and come to agreement on contributing factors, root causes and appropriate corrective actions.
- The **RLI** will extend an invitation to the **Program Manager** at least 5 days prior to the scheduled review date. The **Program Manager** will extend an invitation to other senior and executive management members based on a preliminary assessment of the incident:
 - Final investigation reports (following incident review call where required) are to be forwarded to the **Resolution Consultants SH&E Manager** for inclusion in the permanent incident files.

4.2.3 Communication of Investigation Results

- **Any and all written investigation reports must first be reviewed by Program Manager, or the Chief Counsel’s designee. All drafts shall include “Attorney-Client Work-Product Privilege” at the top of such reports.**
- Where appropriate based on the type, severity and/or scope of the incident, a formal Alert will be prepared by the **RLI** and **Resolution Consultants SH&E Manager**. The Alert will be communicated to the most appropriate audience (i.e. regional, national, business line only, etc.).
- Action items and corrective actions identified by the **RLI** and investigation teams will be tracked to completion by the **Resolution Consultants SH&E Manager**. Additionally, the results will be utilized by the SH&E department to develop appropriate regional, national and business line level reports and to improve existing procedures.

4.3 Roles and Responsibilities

4.3.1 Office Managers, Project Managers, Field Task Managers are responsible to:

- Lead/participate in the formal Incident Investigation process as required by this procedure. Managers should consult with the appropriate Resolution Consultants in-house counsel before conducting any formal investigation of a serious SH&E incident or engaging in any discussion outside of Resolution Consultants.
- Schedule and conduct Incident Review calls as required by this procedure.

4.3.2 Supervisors are responsible for the following:

- Lead/Participate in formal Incident Investigation as required by this procedure.

4.3.3 Resolution Consultants SH&E Manager is responsible for the following:

- Provide training on incident investigation techniques and tools to selected investigation teams.
- Initiate an investigation for all incidents by contacting the **RLI** and establishing the team, report format, and deadlines.
- Participate (following consultation with Resolution Consultants in-house counsel) on investigation teams and Incident Review Calls when requested by the **Responsible Lead Investigator**.
- Track and report on the status of all action items identified within final Incident Investigation Reports.
- Provide final Incident Investigation Report to the Program Manager prior to inclusion in permanent incident files.

4.3.4 Employees involved in an SH&E incident must assist supervisor in completing/ conducting appropriate incident investigations.

5.0 Records

None.

6.0 Attachments

None.

Appendix D
Site Safety and Health Officer Resume
And OSHA 30-Hour Training Certificate



JAMES E. WATSON, SR.

ENVIRONMENTAL TECHNICIAN

SUMMARY OF QUALIFICATIONS

Mr. Watson has 21 years of environmental experience, including site investigations, sampling, and consulting. He has particular experience in inspection of buildings according to Asbestos Hazardous Emergency Response Act guidelines.

PROFESSIONAL EXPERIENCE

Environmental Assessments

ECP Assessments, U.S. Army Corps of Engineers, Louisville District; Multiple Texas Locations

Mr. Watson assisted with Environmental Condition of Property site assessments at Army Reserve centers in Houston, Huntsville, and Pasadena, Texas. Duties included a site visit, site assessment, state and local records review, historical report review, and assisted with report submittal.

Remedial Investigation, SCDHEC; Fort Mill, South Carolina

Conducted a limited vapor intrusion study for the South Carolina Department of Health and Environmental Control (SCDHEC) at the Indian Land Service Center Site. Collected three vapor samples from the crawl space beneath a residence with an additional sample collected to evaluate ambient air and establish background concentrations for comparison. Vapor samples were collected using pre-evacuated, certified-clean Summa Canisters equipped with 24-hour air flow regulators. The canisters were set to the open position and left undisturbed during the prescribed 24-hour sampling period. Following sample collection, regulators were closed and the canisters were submitted for analysis of volatile organic compounds by U.S. Environmental Protection Agency (USEPA) Method TO-15, with selected ion monitoring.

Burnham Corp.; Norwood, North Carolina

Mr. Watson participated in the Phase II Environmental Site Assessment (ESA) for this facility in July 2004. Duties included a site visit, document review, and location and collection of soil, sediment, and groundwater samples.

Carolina First Bank; Andrews, South Carolina

Mr. Watson participated in a Phase I and II ESAs at the former Phoenix Medical Facility in 2001. The project has been transferred from the SCDHEC Underground Storage Tank Program (UST) to the Voluntary Cleanup Program (VCP) of South Carolina.

Psychiatric Solutions, Inc. (Pines Residential Treatment Center Charleston); Summerville, South Carolina

Mr. Watson completed a Phase I ESA for this facility. Duties included a site visit, site assessment, records review, and report.

Psychiatric Solutions, Inc. (Pines Residential Treatment Center Midlands); Columbia, South Carolina

Mr. Watson completed a Phase I ESA for this facility. Duties included a site visit, site assessment, records review, and report.

Healthcare Realty Trust Inc. (Presbyterian Medical Plaza); Charlotte, North Carolina

Mr. Watson completed a Phase I ESA for this facility. Duties included a site visit, site assessment, records review, and report.

Renasant Bank of Tennessee (Hilton Hotel); Greenville, South Carolina

Mr. Watson completed a Phase I ESA for this facility. Duties included a site visit, site assessment, records review, and report.

Education

- Electronics, 1987, Trident Technical College, North Charleston, South Carolina

Certifications

- 40-hour HAZWOPER
- Cardiopulmonary resuscitation and first aid
- ASSE Conference, Employee Behaviors in a Safe and Healthful Workplace, 2001
- ASSE Conference, Current Health and Safety Issues, 2003
- AHERA Building Inspector, South Carolina, 2007

Preacquisition Site Assessments; Various Locations

Conducted numerous PSAs intended to identify potential environmental problems at sites ranging from undeveloped commercial land to manufacturing facilities. Clients included current landowners, prospective purchasers, developers, and financial institutions.

Asbestos Projects**Asbestos Inspections, Charleston County School District; South Carolina**

Performed Charleston County School District's three-year asbestos inspection in 1992. Work consisted of visiting more than 35 schools assigned to provide inspections, sampling of suspect asbestos-containing building material, and generating Asbestos Management Plans for each school.

Asbestos Management, Charleston County Jail; South Carolina

Asbestos consultant during the remodeling activities at the Charleston County Jail. Work consisted of onsite project managing, consulting, air sampling, final inspection, and report generation.

Asbestos Management, Charleston County Capitol Projects Division; South Carolina

Asbestos consultant for various projects. Work consisted of consulting, onsite project managing, air sampling, final inspection, and report generation.

Asbestos and Lead Paint Management, City of Charleston; South Carolina

Asbestos and lead paint consulting for various projects. Work consisted of onsite project managing, air sampling, final inspection, and report generation.

Asbestos Management, Beaufort Town Hall; Beaufort, South Carolina

Asbestos consultant during the remodeling the Town Hall. Work consisted of onsite project managing, air sampling, final inspection, and report generation.

Asbestos Management, Charleston County School District; South Carolina

Asbestos consultant during the renovation of three Charleston County schools. Work consisted of onsite management and report generation.

RCRA Investigations**RCRA Facility Assessment, Charleston Naval Base; South Carolina**

Performed numerous investigations related to the closure of the Charleston Naval Base, Shipyard, and Weapons Station. The Charleston Naval Complex (CNC), which encompassed all three facilities, operated from 1901 to 1996. As a project team member for a number of Resource Conservation and Recovery Act (RCRA), Mr. Watson presented project status reports to the CNC Base Realignment Cleanup Team, which included representatives of the U.S. Navy, SCDHEC, and USEPA. Mr. Watson's tasks included field investigation and management, risk assessment and fate and transport evaluations, liaison with base security, as well as interaction with clients and state and federal regulators. He was responsible for maintaining the Investigation-Derived Waste generated during field investigations, sample logbooks, analytical and validation reports, quality control figures and data, laboratory correspondence, and inventory. He also assisted all Task Order Managers during investigations in all zones.

Zone J Storm Water Investigation, CNC, South Carolina

Mr. Watson was a key team member for the Zone J RFI storm water investigation that evaluated several contamination migration pathways from the former Charleston Navy base to determine contaminant contribution to several Charleston Harbor estuaries. His responsibilities included field manager, field survey of storm water pipeline, sample location selection, coordination with local public works/storm water division, field sampling, and data review. Recently, Mr. Watson performed sediment sampling in the Charleston Harbor estuaries.

Coal Pile RFI, CNC, South Carolina

Mr. Watson assisted with regulators and conducted field activities for an RFI of a former coal pile site adjacent to Noisette Creek (AOC 721). This site included soil, groundwater, and sediment sample collection; ecological evaluations; human health risk assessment; and fate-and-transport issues.

Charleston Naval Weapons Station; Goose Creek, South Carolina

Site investigation of the south side, former open burn/open detonation (OB/OD) ordnance disposal facility. Mr. Watson participated in comprehensive sampling of soil, marsh sediment, and groundwater, as well as report and plan preparation in accordance with approved SCDHEC and US Navy procedures. Mr. Watson also conducted annual monitoring at the explosive ordnance range at the north side OB/OD and assisted in report production.

Naval Air Station Pensacola, Florida

Mr. Watson participated in numerous field investigations at the NAS Pensacola for the Final Remedial Investigation Report. His duties include soil and ground water sampling.

U. S. Navy Short Stay; Moncks Corner, South Carolina

Quarterly groundwater monitoring investigation at a naval recreational site. Duties included monitoring well sampling and water-level measurements.

NWIRP McGregor, Texas

Mr. Watson participated in ground water sampling for the Naval Weapons Industrial Reserve Plant (NWIRP) investigation. His duties included sample management, inventory management, and groundwater sampling.

Yorktown Naval Weapons Station; Norfolk, Virginia

Site investigation at the Yorktown Terminal Treatment Unit, explosive ordnance area. Duties included data management, quarterly groundwater sampling, and water-level measurements.

Sampling, Little Creek Amphibious Naval Base; Virginia Beach, Virginia

Site supervisor over a local environmental firm conducting groundwater sampling.

Spill Prevention Planning

Fort Wainwright Army Base; Fairbanks, Alaska

Mr. Watson assisted in the Spill Prevention, Control, and Countermeasures (SPCC) investigation of petroleum tanks and associated report preparation.

Charleston Air Force Base; Charleston, South Carolina

Assisted in the base SPCC investigation of petroleum tanks and associated report preparation.

Naval Air Station Kingsville; Kingsville, Texas

Mr. Watson assisted in the SPCC investigation of petroleum tanks and associated report preparation.

Naval Air Station Corpus Christi; Corpus Christi, Texas

Mr. Watson assisted in the SPCC investigation of petroleum tanks and associated report preparation.

North Carolina Air National Guard; Charlotte, North Carolina

Mr. Watson assisted in the SPCC investigation of petroleum tanks and associated report preparation.

CERCLA Projects

Macalloy Corp.; Charleston, South Carolina

Remedial Investigation of a ferro-chrome alloy production facility that operated from 1941 to 1998. Mr. Watson assisted in the organization and implementation of field activities during the June 2000 remedial investigation/feasibility study (RI/FS). During USEPA Superfund and SCDHEC site remediation activities, his

duties included groundwater and sediment sampling, water-level measurements, groundwater injection wells, and field laboratory analyst.

Site Safety/Environmental Remediation Services, Macalloy Corp., Charleston, South Carolina

Senior environmental technician during the Emergency Storm Water Action activities and for a remedial investigation/feasibility study (RI/FS) of this ferrochrome alloy production facility that operated from 1941 to 1998. Participated in surface and subsurface soil, geotechnical, geochemistry, hydrogeology, and tidal studies during the RI/FS stage. During the remedial construction phase of the project, responsibilities included construction oversight, health and safety, air monitoring, verification sampling, and quality control. Involved in meetings with South Carolina Department of Health and Environmental Control. Led sampling efforts along tidal creeks to assess the potential contamination to fish tissue that may be traced to the site.

Investigations, United Technology Corp. (Beverage Air), South Carolina

Conducted soil and groundwater investigations at the Beverage Air facility in Spartanburg.

Investigations, Helena Chemical Co., Multiple Locations

- **Fairfax, South Carolina:** Assisted in soil and wipe sampling for pesticides at this National Priorities List site.
- **Enfield, North Carolina:** Assisted in soil sampling with the assistance of immunoassay technology.
- **Cameron, South Carolina:** Assisted in soil sampling with the assistance of immunoassay technology.
- **Tampa, Florida:** Assisted in soil sampling with the assistance of immunoassay technology.

■ **Underground Storage Tank Projects**

UST Removals, Emro Marketing Co., Atlanta, Georgia

Performed various UST removals and monitoring and various Speedway and Marathon Oil locations in South Carolina. Work consisted of monitoring the removal of underground storage tanks, soil and groundwater sampling, data management, and report generation.

UST Removals, South Carolina Department of Highways and Public Transportation; Green Pond, South Carolina

Consulted during the removal of numerous UST during the widening of Highway 17 North. Work consisted of onsite consulting, soil and groundwater sampling, data management, and report generation.

Industrial Hygiene Projects

IH Services, Owens Corning, Multiple Locations

Performed industrial hygiene (IH) services for Owens Corning at various locations throughout the U.S.

IH Services, Weyerhaeuser Co., Multiple Locations

Performed IH services for Weyerhaeuser at various locations throughout North and South Carolina.

IH Services, International Paper Co., Multiple Locations

Performed IH services for International Paper at various locations throughout the U.S.

IH Services, Saint Gobain Co., North Charleston

Performed IH services.

IH Services, Arizona Chemical Co., Multiple Locations

Performed IH services for Arizona Chemicals at various locations throughout the U.S.

February 2013

Re: OSHA 30 Hour Construction Industry Course

To whom it may concern:

Due to the classification of our contract (Architectural and Engineering) and the nature of our job tasks (Hazardous Toxic Radioactive Waste) an OSHA 30 Hour Construction Industry Course is not required.

SSHO requirements followed by this plan are in accordance with EM 385-1-1 Section 28.C.02.

Sincerely,

Resolution Consultants



By: John Knopf
Safety, Health, & Environmental Manager



Appendix E
Competent/Qualified Persons Proof of Competency
.....fBch5dd`jWVYŁ
.

Appendix F
HAZWOPER Training and Medical Monitoring Documentation

Appendix F.1
8-Hour Certificates



Certificate of Training

Hazardous Waste Operations Emergency Response

8 Hour Update
29CFR1910.120(e)(8)
EnSafe Memphis, TN

This is to certify that

David Warren

Has successfully completed the above course title and all appropriate provisions within as described in 29 Code of Federal Regulations 1910.120. This certification is valid for one year after the date listed below.

A handwritten signature in black ink, appearing to read "John Knopf".

Trainer Signature _____
John Knopf, CSP

Date 01-09-13

Cert. # 010913(02)CH



Certificate of Training

Hazardous Waste Operations Emergency Response

8 Hour Update
29CFR1910.120(e)(8)
EnSafe Memphis, TN

This is to certify that
James Watson

Has successfully completed the above course title and all appropriate provisions within as described in 29 Code of Federal Regulations 1910.120. This certification is valid for one year after the date listed below.

A handwritten signature in black ink, appearing to read "John Knopf".

Trainer Signature _____
John Knopf, CSP

Date 01-09-13

Cert. # 010913(05)CH

TECHNICAL ENVIRONMENTAL SERVICE TRAINING INSTITUTE

certifies that

DAVID A. WARREN

has successfully met the 29 CFR 1910.120 certificate requirements for the course entitled

**40 HOUR HEALTH & SAFETY TRAINING
- GENERAL SITE WORKER (E-3-1) -**

and in evidence thereof is awarded this

CERTIFICATE OF COMPLETION

on the 5TH day of JUNE, 19 98


JUNE 5, 1998

Passed Exam

HSW-02412

Certificate Number




Anthony L. Egito, Director

COPY

1110 Navaho Dr. • Suite 602 • Raleigh, North Carolina 27609 • 919-876-8440

Certificate of Completion

This Certifies That

JAMES E. WATSON, SR.

has successfully completed the

*40-hour Hazardous Waste Workers Training Course
as specified in the
OSHA Hazardous Waste Operations and Emergency Response Standard
[29 CFR 1910.120(e)]*

Given at:

GENERAL ENGINEERING LABS
CHARLESTON, SOUTH CAROLINA

Date: September 8, 1992

Number: CH10992144

Arthur D. Tippit

Arthur D. Tippit, CHF
Certificate No. 2501

Appendix F.3
Medical Monitoring

Physical Examination Form

Coastal Occupational Medicine

Byron Williams, M.D.

3605 Meeting St. Rd. Suite C

Charleston, SC 29405

843.744.3500

Fax: 843.744.9716 or 843.744.3938

☒ Annual Physical ☐ Pre-Placement Physical Examination ☐ Other

Company Name EnSafe Inc. Date 1/8/13

Employee David A. Warren

Address 2234 Sandy Point Lane, Mt Pleasant, SC 29466 Phone 843-323-1082

Applicant for Position as Geologist Age 36 M/F M Soc. Sec. No. 225-08-7899

D.O.B. 4/21/76 Smoking History: No PK/D x Yrs.

Abnormal	Normal	Medical History	Height	Weight	Pulse	Blood Pressure	Visual Acuity Glasses
		1. Recent Illness	67	150	56	110/80	Snellen OD 20/70 OS 20/20 <input type="checkbox"/> with <input checked="" type="checkbox"/> w/o
		2. Serious Childhood Diseases					
		3. Vision and/or Hearing					
		4. Heart Disease					
		5. Lung Disease					
		6. Skin Disease					
		7. Back or Musculo-Skeletal					
		8. Fractures					
		9. Nervous System					
		10. Cancer					
		11. Diabetes					
		12. High Blood Pressure					
		13. Operations and/or Hospitalizations					
		14. Medications					
		15. Allergies <u>Seasonal</u>					
		16. Kidney Disease					
		17. Stomach, Bowel or Liver Disease					
		18. Blood Disease					
		Work History					
		19. Work Related Illness or Injury					
		20. Compensation					
		Physical Examination					
		21. Appearance					
		22. Skin					
		23. Heart					
		24. Breast					
		25. Heart					
		26. Lungs					
		27. Gastro-Intestinal (hernia)					
		28. Genito-Urinary					
		29. Musculo-Skeletal					
		30. Nervous System					

Stereo Depth Perception ☐ N. ☐ Abn.

Urine Specific Gravity 1.030
Albumin 0
Sugar 0

Blood ☐ Heme Profile ☐ Serology ☐ Diagnostic Profile

X-Rays Neg. Abn.
Chest ☐ ☐
Back ☐ ☐

Comments or Explanations:

(13) Traumatic cataract from injury to R eye - age 3 no correction that will help

(9) Migraines - 4x per year takes Frovora PRN

(14) Frovora PRN. Flonase 1 spray per day

☒ No Restrictions
☐ Following Restrictions or Recommendations

Copy EKF to PMD.

I have ☒ I have not ☐ advised applicant to consult his or her personal physician.

Examining physician Byron Williams M.D.

I certify that I have answered truthfully questions regarding my health history and have not knowingly withheld any information concerning my health status either past or present. I agree that all findings of this examination may be submitted to my employer.

[Signature]
Signature of Applicant

Byron Williams, M.D.

Coastal Occupational Medicine



"Caring For The Carolina Worker"

Byron Williams, MD

Respirator Clearance

Date: 1-8-13

Employee: David Warren
Company: Ensafe

History, ~~XXXX~~ and Spirometry were reviewed and
the above ☒ May ☐ May Not Wear a Respirator.

see attached

The following Restrictions or Reccomendations
are suggested: No beards while wearing respirator

Recheck in one (1) year

☐ I have advised applicant to consult with his/her
own physician regarding:

Byron Williams, M.D.

Examined by:

Byron Williams, MD
Medical Director

Patient: Watson, James E
Patient ID: 251-43-3921
Birthdate: 07/16/1965 Age: 47

Company: ENSAFE Inc.
Contact: Liz Carpenter 901-372-7962

Date of Service: 07/16/2012
Form: CLEARANC

Page 1

Standard Clearance Form

Work Clearance Summary Sheet

On 7/16/2012, the above named individual was examined and evaluated for fitness for duty. The following is a summary of the findings.

Type of Evaluation Qualified Not Qualified

Physical Fitness ✓

Respirator Exam

HAZMAT

Lead Exam

Asbestos

Based on the medical history, physical exam and initial testing in the office (for example: lung function tests, x-rays, blood tests), the above named individual is cleared to begin work. Final results of x-rays and blood and drug tests may be pending. However, unless otherwise indicated below, the initial evaluation does not show any findings that would likely make this individual unsuitable for employment, even if some results were abnormal.

* ☒ Fit, medically qualified and cleared for full duty/employment without restriction
* ☐ Fit, medically qualified and cleared for full duty/employment with the following restrictions:

* ☐ Not fit for duty/employment

Comments: HPV well controlled, on Levitor for MPL

Barry Weissglass, MD MPH
K.B. Huffman, PA-C

Emily Farrar, MD
Theodolph Jacobs, MD

Edward O'Bryan III, MD

Patient: Watson, James E
Patient ID: 251-43-3921
Birthdate: 07/16/1965 Age: 47

Company: ENSAFE Inc.
Contact: Liz Carpenter 901-372-7962

Date of Service: 07/16/2012
Form: RESPQUAL

Page 1

RESPIRATOR QUALIFICATION

Qualification for Respirator Use

Date 7, 16, 12

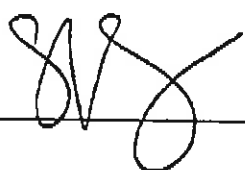
I have reviewed the Pulmonary ^{mild} Function Test and Respiratory Questionnaire of this employee on this date and found: him her qualified not qualified to perform duties on the job including respirator use without restrictions. This test cannot predict which workers may develop respiratory problems after exposure to certain chemicals or other exposures. If this should occur, my recommendation would change.

✓ Barry Weissglass MD, MPH

✓ Emily Farrar, MD

 K.B. Huffman, PA-C

 Edward O'Bryan III, MD

Signature of Medical
Provider: 

Additional Comments:

✓ Mild chest restriction in the absence of lung symptoms and/or previous problems using a respirator is not a reason to restrict respirator use.

 Mild Obstruction in the absence of lung symptoms and/or previous problems using a respirator is not a reason to restrict respirator use.

 Moderate chest restriction in the absence of lung symptoms and/or previous problems using a respirator is not a reason to restrict respirator use.

 Moderate chest obstruction in the absence of lung symptoms and/or previous problems using a respirator is not a reason to restrict respirator use.

Appendix F.4
Supervisor Certificates



HAZWOPER Management and Supervisor Training

EnSafe Inc. certifies that David Warren has received his/her additional 8 hours management and supervisor training in accordance with OSHA 29 CFR 1910.120(e)(4). This training plus the previous 40 Hour HAZWOPER classroom training and 3 days supervised field experience or equivalent as evaluated by EnSafe Inc. qualifies the above named employee as a Hazardous Material / Hazardous Waste manager or supervisor.

A handwritten signature in black ink that reads "John Krupp".

EnSafe Corp. H&S Manager

February 22, 2013

Date



HAZWOPER Management and Supervisor Training

EnSafe Inc. certifies that James Watson has received his/her additional 8 hours management and supervisor training in accordance with OSHA 29 CFR 1910.120(e)(4). This training plus the previous 40 Hour HAZWOPER classroom training and 3 days supervised field experience or equivalent as evaluated by EnSafe Inc. qualifies the above named employee as a Hazardous Material / Hazardous Waste manager or supervisor.

A handwritten signature in black ink that reads "John Krupf".

EnSafe Corp. H&S Manager

February 22, 2013

Date

Appendix G
First Aid and CPR Trained Individuals

HEARTSAVER FIRST AID CPR AED

Heartsaver® First Aid CPR AED



American
Heart
Association®

James Watson

This card certifies that the above individual has successfully completed the objectives and skills evaluations in accordance with the curriculum of the AHA Heartsaver First Aid CPR AED Program. Optional completed modules are those **NOT** marked out:

Child CPR AED

~~Infant CPR~~

~~Written test~~

10.2011

Issue Date

10.2013

Recommended Renewal Date

HEARTSAVER FIRST AID CPR AED

Training

Center Name

LifeGuard Medical Solutions

TC ID #

TN20087

TC

Info

821 Fesslers Pkway

Nashville, TN 37210

TC

866-932-2331

Course

Location

CharlestonCPR

Instructor

Name

James S. Sattler

Inst. ID #

04070303520

Holder's

Signature

James Sattler

© 2011 American Heart Association

Tampering with this card will alter its appearance. 90-1815

Appendix H
Site Safety and Health Plan

APPENDIX H SITE SAFETY AND HEALTH PLAN

VISUAL INSPECTION AND INVENTORY CHARLESTON NAVAL COMPLEX — BUILDING 13 CHARLESTON, SOUTH CAROLINA

Revision: 0

**Resolution Consultants Job Number:
0888812793**

Prepared For:

**Department of the Navy
BRAC Program Management Office Southeast
4130 Faber Place Drive
North Charleston, South Carolina 29405**

and



**Naval Facilities Engineering Command Southeast
Bldg. 135 North
P.O. Box 30
Jacksonville, Florida 32212-0030**

Prepared By:



**Resolution Consultants
A Joint Venture of AECOM & EnSafe
1500 Wells Fargo Building
440 Monticello Avenue
Norfolk, Virginia 23510**

**Contract Number: N62470-11-D-8013
Delivery Order Number: JM16**

February 2013

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Attachment 2	SSHP Revision Table
Attachment 3	Activity Hazard Analyses
Attachment 4	SH&E SOPs
Attachment 5	Route Map to Emergency Medical Facility

Acronyms and Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
AHA	Activity Hazard Analysis
APP	Accident Prevention Plan
°C	Degrees Celsius
CIH	Certified Industrial Hygienist
CRZ	Contaminant Reduction Zone
CSP	Certified Safety Professional
EAP	Emergency Action Plan
EC	Emergency Coordinator
EZ	Exclusion Zone
HAZWOPER	Hazardous Waste Operations and Emergency Response
HPTP	High Power Turn-up Pad
MSDS	Material Safety Data Sheet
PM	Project Manager
PPE	Personal Protective Equipment
ppm	Parts per million
PSC	Potential Source of Contamination
SH&E	Safety, Health, and Environmental
SOP	Standard Operating Procedure
SSHP	Site Safety and Health Plan
SSHO	Site Safety Health Officer
SZ	Support Zone
TLV	Threshold Limit Value

H.1 Introduction

The provisions of this Site Safety and Health Plan (SSHP) are mandatory for all Resolution Consultants personnel (including both AECOM and EnSafe employees, as applicable) engaged in fieldwork associated with the environmental services being conducted at the subject site. For the **purposes of this SSHP, the term “Resolution Consultants” means an employee of any of the three firms.** A copy of this SSHP and any applicable SSHP supplements shall be accessible on site and available for review at all times. Recordkeeping will be maintained in accordance with this SSHP and the applicable Standard Operating Procedures (SOPs) referenced throughout this document and the Accident Prevention Plan (APP). In the event of a conflict between this SSHP, the SOPs and federal, provincial, state, and local regulations, workers shall follow the most stringent/protective requirements. Concurrence with the provisions of this SSHP is mandatory for all personnel covered by this SSHP and personnel must sign the acknowledgement page in Attachment 1 to indicate they have read and understand the SSHP.

Work will be performed in accordance with **Resolution Consultant’s Plan** of Action/Cost Estimate (POA/CE), dated May 15, 2012. Deviations from the POA/CE may require that the Resolution Consultants Safety, Health, and Environmental (SH&E) Manager or designee review and approve changes made to this SSHP to ensure adequate protection of personnel and other property. All changes to this SSHP must be documented using the form in Attachment 2.

H.2 Site Description and Contaminant Characterization

H.2.1 General Description

The services to be provided are limited to a visual chemical inspection/inventory of contaminated **laboratory equipment and laboratory wastes at Charleston Naval Complex’s (CNC) Building 13.** The inspection is being performed to provide information necessary for project planning associated with the subsequent decontamination of laboratory equipment and characterization, removal, and disposal of laboratory wastes to be accomplished at a later time and under a separate scope of work.

H.2.2 Site Background and History

From construction in 1906 to 2000, the approximate 13,000-square foot, three-story, brick Building 13 served as a quality assurance office and administration building for the United States Navy. A portion of the building historically housed chemical and testing laboratories. Laboratory operations ceased in 2000 and the building has remained vacant since that time. Contaminated laboratory equipment and laboratory wastes, including labeled and unlabeled chemical containers, remain onsite. Based on information provided by former Navy employees, laboratory operations were confined to three rooms on the second floor and a single room of the first floor of the building.

H.2.3 Previous Investigations

Concerns related to the building's structural integrity were expressed, during a 2011 visual assessment by Concept Technologies, Inc. As summarized in a January 16, 2011 letter report (Concept Technologies, Inc., 2011), in addition to the concern over the unstable structure, the previous visual inspection listed the following as potential health hazards at the Site: unidentified chemical containers, asbestos in building materials, lead based paint on walls, and mold and pigeon feces, due to the vacant status of the building.

A subsequent 2012 structural evaluation by Britt, Peters, & Associates, under subcontract to Resolution Consultants, confirmed the presence of laboratory equipment in rooms 201, 203, and 206 on the second floor. Minimal lab equipment and materials were also observed on the first floor. As documented in Britt, Peters, & Associates, January 8, 2013, *Structural Evaluation Report*, the overall structural components are in fair to good condition. Although, maintenance issues and water intrusion issues were observed, no active signs of distress or deficiencies were noted with regards to the **building's foundation or structure**. Due to the presence of debris, the floor surface could not be visually inspected in rooms 201, 203, 204, and 206. Some cracking was observed on the underside of the floor slab beneath rooms 203 and 206; thus, the report recommends that only three people should enter these rooms due to uncertainty with regards to the weight limits of the slab. Additional evaluation should be performed, following debris removal, should the need arise for heavy equipment to be operated in these rooms. At this time, Britt, Peters, & Associates does not believe that shoring is necessary to allow safe entry for the visual inspection.

H.2.4 Potential Chemical Exposure

The scope of work is limited to a visual inventory to be performed by a hazardous materials subcontractor. Resolution Consultants will provide oversight during the inventory. No chemicals or wastes will be handled by Resolution Consultants or their subcontractors, during project execution.

H.3 Activity Hazard Analysis

Tasks that require an Activity Hazard Analysis (AHA) include oversight for chemical inventory

AHAs for all work tasks that will be conducted during this phase of work are included in Attachment 3.

H.4 Staff Organization, Qualifications, and Responsibilities

H.4.1 Deputy Program Manager [Mr. Jeff James, P.E.]

The Resolution Consultants Deputy Program Manager is responsible for supporting the establishment and oversight of the overall health and safety program presented in the APP.

H.4.2 Resolution Consultants Safety, Health, and Environmental Manager [John Knopf, CSP]

The SH&E Manager is assigned to provide guidance and technical support for the project. Duties include the following:

- Approving this SSHP and any required changes
- Approving the designated Site Safety Health Officer (SSHO)
- Reviewing all personal exposure monitoring results
- Investigating any reported unsafe acts or conditions

The SH&E Manager may designate another safety professional as the direct liaison for this project; if that is the case, he will remain available for any or all of the tasks listed here or elsewhere in this SSHP in lieu of the designee.

H.4.3 Project Manager [Dave Warren]

The Project Manager (PM) has overall management authority and responsibility for all site operations, including safety. The PM will provide the Site Supervisor with work plans, staff, and budgetary resources, which are appropriate to meet the safety needs of the project operations.

H.4.4 Site Supervisor [James Watson]

The Site Supervisor has the overall responsibility and authority to direct work operations at the job site according to the provided work plans. The PM may act as the Site Supervisor while on site.

H.4.4.1 Responsibilities

The Site Supervisor is responsible to:

- Discuss deviations from the work plan with the SSHO and PM
- Discuss safety issues with the PM, SSHO, and field personnel

- Assist the SSHO with the development and implementation of corrective actions for site safety deficiencies
- Assist the SSHO with the implementation of this SSHP and ensuring compliance
- Assist the SSHO with inspections of the site for compliance with this SSHP and applicable SOPs

H.4.4.2 Authority

The Site Supervisor has authority to:

- Verify that all operations are in compliance with the requirements of this SSHP, and halt any activity that poses a potential hazard to personnel, property, or the environment.
- Temporarily suspend individuals from field activities for infractions against the SSHP pending consideration by the SSHO, the SH&E Manager or designee, and the PM.

H.4.4.3 Qualifications

In addition to being Hazardous Waste Operations and Emergency Response (HAZWOPER)-qualified (see Section 4.1), the Site Supervisor is required to have completed the 8-hour HAZWOPER Supervisor Training Course in accordance with 29 Code of Federal Regulation 1910.120 (e)(4).

H.4.5 Site Safety Health Officer [*James Watson*]

H.4.5.1 Responsibilities

The SSHO is responsible to:

- Update the site-specific SSHP to reflect changes in site conditions or the scope of work. SSHP updates must be reviewed and approved by the SH&E Manager or designee. Updates must be documented using the Revision History in Attachment 2.
- Be aware of changes in Resolution Consultants Safety Policies, Programmatic Health and Safety Plan, or SOPs.
- Monitor the lost time incidence rate for this project and work toward improving it.
- Inspect the site for compliance with this SSHP and the SOPs using the appropriate audit inspection checklist provided by the SH&E Manager or designee.

- Work with the Site Supervisor and PM to develop and implement corrective action plans to correct deficiencies discovered during site inspections. Deficiencies will be discussed with project management to determine appropriate corrective action(s).
- Contact the SH&E Manager or designee for technical advice regarding safety issues.
- Provide a means for employees to communicate safety issues to management in a discreet manner (e.g., suggestion box, etc.).
- Determine emergency evacuation routes, establishing and posting local emergency telephone numbers, and arranging emergency transportation.
- Check that all site personnel and visitors have received the proper training and medical clearance prior to entering the site.
- Establish any necessary controlled work areas (as designated in this SSHP or other safety documentation).
- Present tailgate safety meetings and maintain attendance logs and records in accordance with SH&E SOP 5-210-Tailgate Safety Meeting Log (Attachment 4).
- Discuss potential health and safety hazards with the Site Supervisor, the SH&E Manager or designee, and the PM.
- Select an alternate SSHO by name and inform him/her of their duties, in the event that the SSHO must leave or is absent from the site. The alternate SSHO must be approved by the PM.

H.4.5.2 Authority

The SSHO has authority to:

- Verify that all operations are in compliance with the requirements of this SSHP.
- **Issue a “Stop Work Order” under the conditions set forth in this SSHP.**
- Temporarily suspend individuals from field activities for infractions against the SSHP pending consideration by the SH&E Manager or designee and the PM.

H.4.5.3 Qualifications

In addition to being HAZWOPER-qualified, the SSHO is required to have completed the 8-hour HAZWOPER Supervisor Training Course in accordance with 29 Code of Federal Regulation 1910.120 (e)(4).

H.4.6 Employees

H.4.6.1 Employee Responsibilities

Responsibilities of employees associated with this project include, but are not limited to:

- Understanding and abiding by the policies and procedures specified in the SSHP and other applicable safety policies, and clarifying those areas where understanding is incomplete.
- Providing feedback to health and safety management relating to omissions and modifications in the SSHP or other safety policies.
- Notifying the SSHO, in writing, of unsafe conditions and acts.

H.4.6.2 Employee Authority

The health and safety authority of each employee assigned to the site includes the following:

- The right to refuse to work and/or stop work authority when the employee feels that the work is unsafe (including subcontractors or team contractors), or where specified safety precautions are not adequate or fully understood.
- The right to refuse to work on any site or operation where the safety procedures specified in this SSHP or other safety policies are not being followed.
- The right to contact the SSHO or the SH&E Manager or designee at any time to discuss potential concerns.
- The right and duty to stop work when conditions are unsafe, and to assist in correcting these conditions

H.5 Training, General and Project Specific

H.5.1 HAZWOPER Qualifications

Personnel performing work at the job site must be qualified as HAZWOPER workers (unless otherwise noted in specific AHAs or by the SSHO), and must meet the medical monitoring and training requirements specified in the Resolution Consultants SH&E SOPs.

If site monitoring procedures indicate that a possible exposure has occurred above the Occupational Safety and Health Administration permissible exposure limit, employees may be required to receive supplemental medical testing to document any symptoms that may be specific to the particular materials present.

H.5.3 Site-Specific Safety Training

All Resolution Consultants personnel performing activities at the site will be trained in accordance with SH&E SOP *5-003-SH&E Training* (Attachment 4). All personnel are required to remain current in all of their required training and evaluate their need for additional training when there is a change in work. In addition to the general health and safety training programs, personnel will be required to complete any supplemental task specific training developed for the tasks to be performed. Administration and compliance with the requirements for additional task-specific training will be the responsibility of the project or lead manager. Any additional required training that is completed will be documented and tracked in the project files.

H.5.3.1 Competent Person Training Requirements

Work requiring a task specific competent person is not anticipated for the drill rig operations on this site. If new tasks are identified, the SSHO/Site Supervisor will assess the need for a competent person and be responsible for identifying the appropriate employee and area of competency.

Table 4-1 Task-Specific Competent Persons		
Employee Name	Organization	Area of Competency
NA	NA	NA

Notes:

NA = Not applicable

The training requirements for competent persons are specified in the indicated SOPs and/or SH&E SOP 5-202-Competent Person Designation (refer to Appendix C of the APP). By identifying an employee as a “competent person”, that person has now been authorized to take prompt corrective measures to eliminate hazards.

H.6 Personal Protective Equipment

The purpose of personal protective equipment (PPE) is to provide a barrier, which will shield or isolate individuals from the chemical and/or physical hazards that may be encountered during work activities. SH&E SOP 5-208-*Personal Protective Equipment Program* (Attachment 4) lists the general requirements for selection and usage of PPE. Table H-2 lists the minimum PPE required during site operations and additional PPE that may be necessary. The specific PPE requirements for each work task are specified in the individual AHAs. By signing this SSHP the employee agrees having been trained in the use, limitations, care, and maintenance of the protective equipment to be used by the employee at this project. If training has not been provided, request same of the PM/SSHO for the proper training before signing.

Table H-2 Personal Protective Equipment		
Type	Material	Additional Information
Minimum PPE		
Boots	Leather	ANSI approved safety toe
Safety Glasses	ANSI Z87.1	ANSI Approved; ≥98% UV protection
Hard Hat	ANSI Z89.1	ANSI Approved; recommended wide-brim
Work Uniform		No shorts/cutoff jeans or sleeveless shirts
Additional PPE		
Leather Gloves		If working with sharp objects or powered equipment.
Protective Chemical Gloves	Inner: Chemical resistant	Use during handling of all potentially impacted media.
Level C Respiratory Protection	Upgrade to Half Face based on SSHO recommendations	Upgrade based on air monitoring requirements established in Section H.8

H.6.1 PPE Doffing and Donning (UTILIZATION) Information

The following information is to provide field personnel with helpful hints that, when applied, make donning and doffing of PPE a more safe and manageable task:

- Never cut disposable booties from your feet with basic utility knives. This has resulted in workers cutting through the booty and the underlying sturdy leather work boot, resulting in significant cuts to the legs/ankles. Use a pair of scissors or a package/letter opener (cut above and parallel with the work boot) to start a cut in the edge of the booty, then manually tear the material down to the sole of the booty for easy removal.

- When applying duct tape to PPE interfaces (wrist, lower leg, around respirator, etc.) and zippers, leave approximately one inch at the end of the tape to fold over onto itself. This will make it much easier to remove the tape by providing a small handle to grab while still wearing gloves. Without this fold, trying to pull up the tape end with multiple gloves on may be difficult and result in premature tearing of the PPE.
- **Have a “buddy” check your ensemble to ensure proper donning before entering controlled work areas.** Without mirrors, the most obvious discrepancies can go unnoticed and may result in a potential exposure situation.

Never perform personal decontamination with a pressure washer.

H.7 Medical Surveillance

Medical Records for Resolutions Consultants employees working on the Building 13 Site are included in Appendix F.4 of the APP.

H.8 Exposure Monitoring and Air Sampling Program

Monitoring shall be performed where there may be a question of employee exposure to hazardous concentrations of hazardous substances in order to assure proper selection of engineering controls, work practices, and PPE so that employees are not exposed to levels, which exceed permissible exposure limits, or published exposure levels, if there are no permissible exposure limits.

Air monitoring shall be used to identify and quantify airborne levels of hazardous substances and safety and health hazards in order to determine the appropriate level of employee protection needed on site. Periodic monitoring shall be conducted when the possibility of an immediate danger to life or health, IDLH, condition or flammable atmosphere has developed or when there is indication that exposures may have risen over permissible exposure limits or published exposure levels since prior monitoring. Situations where it shall be considered whether the possibility that exposures have risen are as follows:

- When work begins on a different portion of the site
- When contaminants other than those previously identified are being handled
- When a different type of operation is initiated (e.g., drum opening as opposed to exploratory well drilling)

- When employees are handling leaking drums or containers or working in areas with obvious liquid contamination

Resolution Consultants will be providing oversight only.

Table H-3 Monitoring Parameters and Equipment		
Instrument	Manufacturer/Model*	Substances Detected
N/A	N/A	N/A

Notes:

N/A = Not applicable

*Or similar unit, as approved by the Resolution Consultants Health and Safety Manager or designee

H.8.1 Health and Safety Action Levels

An action level is a point at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions. The concentration level (above background level) and the ability of the PPE to protect against that specific contaminant determine each action level. The action levels are based on concentrations in the breathing zone. Action levels are based upon sound scientific principles as expressed by various regulatory agencies or industry groups.

If ambient levels are measured, which exceed the action levels in areas accessible to unprotected personnel, necessary control measures (barricades, warning signs, and mitigative actions to limit, etc.) must be implemented prior to commencing activities at the specific work area.

Personnel should also be able to upgrade or downgrade their level of protection with the concurrence of SSHA or the SH&E Manager or designee.

Reasons to upgrade:

- Known or suspected presence of dermal hazards
- Occurrence or likely occurrence of gas, vapor, or dust emission
- Change in work task that will increase the exposure or potential exposure to hazardous materials

Reasons to downgrade:

- New information indicating that the situation is less hazardous than was originally suspected
- Change in site conditions that decrease the potential hazard
- Change in work task that will reduce exposure to hazardous materials

H.8.2 Monitoring Procedures

The SSHO will assess the atmosphere for acceptable concentrations/levels using the prescribed hand-held direct read instrumentation prior to any personnel entering into the area, and continuously thereafter. The monitoring devices may then be assigned to individual personnel working within the Exclusion Zone (EZ). Care should be taken to apply all necessary correction factors to your monitoring results (Volatile organic compounds and Explosive Atmosphere channels) specific to the contaminants of concern.

Table H-4 lists the monitoring procedures and action levels.

Table H-4 Monitoring Procedures and Action Levels			
Parameter	Location and Interval	Response Level (Meter Units/ppm Above Background)	Response
N/A	N/A	N/A	N/A
		N/A	N/A

Note:

N/A = Not applicable
Ppm = Part per million

H.8.3. Monitoring Equipment Calibration

All instruments used will be calibrated at the beginning and end of each work shift, in accordance with the manufacturer's recommendations. If the owner's manual is not available, the personnel operating the equipment will contact the applicable office representative, rental agency, or manufacturer for technical guidance for proper calibration. If equipment cannot be pre-calibrated to specifications, site operations requiring monitoring for worker exposure or offsite migration of contaminants will be postponed or temporarily ceased until this requirement is completed.

H.8.4. Personal Sampling

Should site activities warrant performing personal sampling (breathing zone) to better assess chemical exposures experienced by Resolution Consultants employees, the SSHO, under the direction of a Certified Industrial Hygienist or a Certified Safety Professional will be responsible for specifying the monitoring required. Within five working days after the receipt of monitoring results, the Certified Industrial Hygienist or Certified Safety Professional will notify each employee, **in writing, of the results that represent that employee's exposure. Copies of air sampling results will be maintained in the SSHO project files.**

If the site activities warrant, the subcontractor will ensure its employees' exposures are quantified via the use of appropriate sampling techniques. The subcontractor shall notify the employees sampled in accordance with health and safety regulations, and provide the results to the SSHO for **use in determining the potential for other employees' exposure.**

H.9 Heat and Cold Stress

Heat and cold stress may vary based upon work activities, PPE/clothing selection, geographical locations, and weather conditions. To reduce the potential of developing heat/cold stress, be aware of the signs and symptoms of heat/cold stress and watch fellow employees for signs of heat/cold stress.

H.9.1 Responding to Heat-Related Illness

Heat stress can be a significant field site hazard, particularly for non-acclimated personnel operating in a hot, humid setting. Site personnel will be instructed in the identification of a heat stress victim, the first-aid treatment procedures for the victim and the prevention of heat stress casualties. Work-rest cycles will be determined and the appropriate measures taken to prevent heat stress as outlined in SH&E SOP 5-511-Heat Stress Prevention (Attachment 4). The guidance presented in Table H-5 will be used in identifying and treating heat-related illness.

Table H-5 Identification and Treatment of Heat-Related Illness		
Type of Heat-Related Illness	Description	First Aid
Mild Heat Strain	The mildest form of heat-related illness. Victims exhibit irritability, lethargy, and significant sweating. The victim may complain of headache or nausea. This is the initial stage of overheating, and prompt action at this point may prevent more severe heat-related illness from occurring.	<ul style="list-style-type: none"> • Provide the victim with a work break during which he/she may relax, remove any excess protective clothing, and drink cool fluids. • If an air-conditioned spot is available, this is an ideal break location. • Once the victim shows improvement, he/she may resume working; however, the work pace should be moderated to prevent recurrence of the symptoms.
Heat Exhaustion	Usually begins with muscular weakness and cramping, dizziness, staggering gait, and nausea. The victim will have pale, clammy moist skin and may perspire profusely. The pulse is weak and fast and the victim may faint unless they lie down. The bowels may move involuntarily.	<ul style="list-style-type: none"> • Immediately remove the victim from the work area to a shady or cool area with good air circulation (<i>avoid drafts or sudden chilling</i>). • Remove all protective outerwear. • Call a physician. • Treat the victim for shock. (<i>Make the victim lie down, raise his or her feet 6–12 inches, and keep him/her cool by loosening all clothing</i>). • If the victim is conscious, it may be helpful to give him/her sips of water. • Transport victim to a medical facility as soon as possible.
Heat Stroke	The most serious of heat illness, heat stroke represents the collapse of the body's cooling mechanisms. As a result, body temperature may rise to 104 degrees Fahrenheit or higher. As the victim progresses toward heat stroke, symptoms such as headache, dizziness, nausea can be noted, and the skin is observed to be dry, red, and hot. Sudden collapse and loss of consciousness follows quickly and death is imminent if exposure continues. Heat stroke can occur suddenly.	<ul style="list-style-type: none"> • Immediately evacuate the victim to a cool/shady area. • Remove all protective outerwear and as much personal clothing as decency permits. • Lay the victim on his/her back w/the feet slightly elevated. • Apply cold wet towels or ice bags to the head, armpits, and thighs. • Sponge off the bare skin with cool water. • The main objective is to cool without chilling the victim. • Give no stimulants or hot drinks. • Since heat stroke is a severe medical condition requiring professional medical attention, emergency medical help should be summoned immediately to provide onsite treatment of the victim and proper transport to a medical facility.

H.9.1.1 Responding to Cold-Related Illness

If work on this project is conducted in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Work will cease under unusually hazardous conditions (e.g., wind-chill less than 0°F, or wind-chill less than 10°F with precipitation). Systemic cold exposure is referred to as hypothermia. Localized cold exposure is generally labeled frostbite.

Recognition of the symptoms of cold related illness will be discussed during the health and safety briefing conducted prior to the onset of site activities. Refer to the 2003 American Conference of Governmental Industrial Hygienists Threshold Limit Values (TLV) for Chemical Substances and Physical Agents for additional information on cold stress prevention, monitoring, and work-warming regimens. Work-rest cycles will be determined and the appropriate measures taken to prevent cold stress as outlined in SH&E SOP 5-505-Cold Stress (Attachment 4).

H.9.1.2 Hypothermia

Hypothermia is a life-threatening condition in which the core body temperature falls below 95°F. Hypothermia can occur at temperatures above freezing particularly, when the skin or clothing becomes wet. During exposure to cold, maximum shivering occurs when the core temperature falls to 95°F. As hypothermia progresses, depression of the central nervous system becomes increasingly more severe. Symptoms and warning signs progressively worsen and range from sluggishness and slurred speech to disorientation and eventually unconsciousness (see Table H-6).

Table H-6 Progressive Clinical Symptoms of Hypothermia	
Core Temperature (°F)	Clinical Signs
95°	Maximum shivering
87° — 89°	Consciousness clouded; blood pressure becomes difficult to obtain; pupils dilated
84° — 86°	Progressive loss of consciousness; muscular rigidity; respiratory rate decreases
79°	Victim rarely conscious
70° — 72°	Maximum risk of ventricular fibrillation

The ability to sustain metabolic rate and to reduce skin blood flow is diminished by fatigue. Thus, fatigue increases the risk of severe hypothermia by decreasing metabolic heat. Additionally, because blood flow through the skin is reduced to conserve heat, the skin and underlying tissues become more susceptible to frostbite.

H.9.1.3 Frostbite

Frostbite is both the general and medical term given to areas of cold injury. Unlike hypothermia, frostbite rarely occurs unless environmental temperatures are less than freezing and usually less than 20°F. Frostbite injuries occur most commonly on the distal parts of the body (nose, earlobes, hands, and feet) that are subject to intense vasoconstriction.

The three general categories of frostbite are:

- Frostnip — A whitened area of the skin, which is slightly burning or painful
- Superficial frostbite — Waxy, white skin with a firm sensation but with some resiliency. **Symptomatically feels “warm” to the victim with a notable cessation of pain**
- Deep frostbite — Tissue damage deeper than the skin, at times, down to the bone. The skin is cold, numb, and hard

H.9.1.4 Preventing Cold Related Illness

The following are precautions that will be taken to prevent illness relating to cold stress:

- Educate worker to recognize the symptoms of frostbite and hypothermia.
- Ensure the availability of an enclosed, heated environment within the vehicles. The nearest heated environment will be the interior of the vehicles at the site.
- Ensure the availability of dry changes of clothes.
- Record temperature readings.
- Ensure the availability of warm beverages, preferably non-caffeinated.

H.9.1.5 Monitoring for Cold Exposure

Cold stress monitoring will be conducted in accordance with the American Conference of Governmental Industrial Hygienists cold stress TLV. The TLV objective is to prevent the deep body core temperature from falling below 96.8°F and to prevent cold injury to body extremities. Temperature monitoring and recording will be initiated in the following situations:

- At the SSHO discretion when suspicion is based on changes in worker's performance or mental status
- At worker's request
- As a screening measure whenever any one worker on the site develops hypothermia
- Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours

H.10 Standard Operating Procedures, Engineering Controls, and Work Practices

H.10.1 Site Rules and Prohibitions

All site personnel shall conduct themselves in a safe manner and maintain a working environment that is free of additional hazards, in adherence to SH&E SOPs *5-001-Safe Work Standards and Rules* and *5-307-Housekeeping, Worksite* (Attachment 4).

H.10.1.1 Housekeeping

During site activities, work areas will be continuously policed for identification of excess trash and unnecessary debris. Excess debris and trash will be collected and stored in an appropriate container (e.g., plastic trash bags, garbage can, roll-off bin) prior to disposal. At no time will debris or trash be intermingled with waste PPE or contaminated materials.

H.10.1.2 Smoking, Eating, or Drinking

Smoking, eating, and drinking will not be permitted inside any controlled work area at any time. Field workers will first wash hands and face immediately after leaving controlled work areas (and always prior to eating or drinking). Consumption of alcoholic beverages is prohibited at any Resolution Consultants site. Smoking, eating, or drinking must be in an approved area.

H.10.1.3 Personal Hygiene

The following personal hygiene requirements will be observed:

Water Supply: A water supply meeting the following requirements will be utilized:

Potable Water — An adequate supply of potable water will be available for field personnel consumption. Potable water can be provided in the form of water bottles, canteens, water coolers, or drinking fountains. Where drinking fountains are not available, individual-use cups will be provided as well as adequate disposal containers. Staff sharing a potables cooler shall not introduce individually opened containers into the team cooler in an effort to minimize concerns for indirect contamination. Additionally, each potable cooler will be sealed to protect the water quality.

Potable water containers will be properly identified in order to distinguish them from non-potable water sources. All containers of potable water will be marked with a label stating:

***Potable Water ONLY
Not Intended for Sample Storage***

Non-Potable Water — Non-potable water may be used for hand washing and cleaning activities. Non-potable water will not be used for drinking purposes. All containers of non-potable water will be marked with a label stating:

***Non-Potable Water
Not Intended for Drinking Water Consumption***

Toilet Facilities: A minimum of one toilet will be provided for every 20 personnel on site, with separate toilets maintained for each sex except where there are less than 5 total personnel on site. For mobile crews where work activities and locations permit transportation to nearby toilet facilities onsite facilities are not required.

Washing Facilities: Employees will be provided washing facilities (e.g., buckets with water and Alconox) at each work location. The use of water and hand soap (or similar substance) will be required by all employees following exit from the EZ, prior to breaks, and at the end of daily work activities.

H.10.1.4 Buddy System

All field personnel will use the buddy system when working within any controlled work area. Personnel belonging to another organization on site can serve as "buddies" for Resolution Consultants personnel. Under no circumstances will any employee be present alone in a controlled work area.

H.10.1.5 Stop Work Authority

All employees have the right and duty to stop work when conditions are unsafe, and to assist in correcting these conditions as outlined in SH&E SOP 5-002-*Stop Work Authority* (refer to Appendix C in the APP). Whenever the SSHO determines that workplace conditions present an uncontrolled risk of injury or illness to employees, immediate resolution with the appropriate supervisor shall be sought. Should the supervisor be unable or unwilling to correct the unsafe conditions, the SSHO is authorized and required to stop work, which shall be immediately binding on all affected Resolution Consultants employees and subcontractors.

Upon issuing the stop work order, the SHSO shall implement corrective actions so that operations may be safely resumed. Resumption of safe operations is the primary objective; however, operations shall not resume until the SH&E Manager or designee has concurred that workplace conditions meet acceptable safety standards.

H.10.1.6 Client Specific Safety Requirements

When working on or around the flight line, training according to base policies should be conducted.

H.10.2 Work Permit Requirements

No work will be conducted requiring special permitting during this phase of work. Should the scope change this section will be amended and work permits will be attached to this SSHP.

H.10.3 Material Handling Procedures

Manual Material Handling Procedures are included in 05-308-Manual Lifting Field (Attachment 4) Standard Operating Procedures.

H.10.4 Drum, Container, Tank Handling

No material handling will be performed by Resolution Consultant employees.

H.10.5 Comprehensive AHA of Treatment Technologies

No treatment technologies are being implemented during this phase of work.

H.11 Site Control Measures

H.11.1 General

The purpose of site control is to minimize potential contamination of workers, protect the public from site hazards, and prevent vandalism. The degree of site control necessary depends on the site characteristics, site size, and the surrounding community.

Controlled work areas will be established at each work location, and if required, will be established directly prior to the work being conducted. Diagrams designating specific controlled work areas will be drawn on site maps, posted in the support vehicle or trailer, and discussed during the daily safety meetings. If the site layout changes, the new areas and their potential hazards will be discussed immediately after the changes are made. General examples of zone layouts have been developed for drilling and earth moving activities (e.g., excavating, trenching, drilling) and are attached to this section.

H.11.2 Controlled Work Areas

The scope of this project will not require the implementation of HAZWOPER work zones at this time. Should the scope change the requirements will be amended to address all HAZWOPER requirements.

Each HAZWOPER controlled work area will consist of the following three zones:

- *EZ*: Contaminated work area
- *Contamination Reduction Zone (CRZ)*: Decontamination area
- *Support Zone (SZ)*: **Uncontaminated or “clean area” where personnel should not be exposed to hazardous conditions**

Each zone will be periodically monitored in accordance with the air monitoring requirements established in this SSHP. The EZ and the CRZ are considered work areas. The SZ is accessible to the public (e.g., vendors, inspectors).

H.11.2.1 Exclusion Zone

The EZ is the area where primary activities occur, such as sampling, remediation operations, installation of wells, cleanup work, etc. This area must be clearly marked with hazard tape, barricades or cones, or enclosed by fences or ropes. Only personnel involved in work activities, and meeting the requirements specified in the applicable AHA and this SSHP will be allowed in an EZ. The extent of each area will be sufficient to ensure that personnel located at/beyond its boundaries will not be affected in any substantial way by hazards associated with sample collection activities.

All personnel should be alert to prevent unauthorized, accidental entrance into controlled-access areas (the EZ and CRZ). If such an entry should occur, the trespasser should be immediately escorted outside the area, or all HAZWOPER-related work must cease. All personnel, equipment, and supplies that enter controlled-access areas must be decontaminated or containerized as waste prior to leaving (through the CRZ only).

H.11.2.2 Contamination Reduction Zone

The CRZ is the transition area between the contaminated area and the clean area. Decontamination is the main focus in this area. The decontamination of workers and equipment limits the physical transfer of hazardous substances into the clean area. This area must also be clearly marked with hazard tape and access limited to personnel involved in decontamination.

H.11.2.3 Support Zone

The SZ is an uncontaminated zone where administrative and other support functions, such as first aid, equipment supply, emergency information, etc., are located. The SZ shall have minimal potential for significant exposure to contaminants (i.e., background levels).

Employees will establish a SZ (if necessary) at the site before the commencement of site activities. The SZ would also serve as the entry point for controlling site access.

H.11.3 Site Access Documentation

If implemented by the PM, all personnel entering the site shall complete the "Site Entry/Exit Log" located at the site trailer or primary site support vehicle.

H.11.4 Site Security

Site security is necessary to:

- Prevent the exposure of unauthorized, unprotected people to site hazards
- Avoid the increased hazards from vandals or persons seeking to abandon other wastes on the site
- Prevent theft
- Avoid interference with safe working procedures

To maintain site security during working hours:

1. Maintain security in the SZ and at access control points.
2. Establish an identification system to identify authorized persons and limitations to their approved activities.
3. Assign responsibility for enforcing authority for entry and exit requirements.
4. When feasible, install fencing or other physical barrier around the site.

5. If the site is not fenced, post signs around the perimeter and whenever possible, use guards to patrol the perimeter. Guards must be fully apprised of the hazards involved and trained in emergency procedures.
6. Have the PM approve all visitors to the site. Make sure they have a valid purpose for entering the site. Have trained site personnel accompany visitors at all times and require them to wear the appropriate protective equipment.

To maintain site security during off-duty hours:

1. If possible, assign trained, in-house technicians for site surveillance. They will be familiar **with the site, the nature of the work, the site's hazards, and respiratory protection techniques.**
2. If necessary, use security guards to patrol the site boundary. Such personnel may be less expensive than trained technicians, but will be more difficult to train in safety procedures and will be less confident in reacting to problems around hazardous substances.
3. Enlist public enforcement agencies, such as the local police department, if the site presents a significant risk to local health and safety.
4. Secure the equipment.

H.12 Equipment Decontamination

H.12.1 General Requirements

All possible and necessary steps shall be taken to reduce or minimize contact with chemicals and contaminated/impacted materials while performing field activities (e.g., avoid sitting or leaning on, walking through, dragging equipment through or over, tracking, or splashing potential or known contaminated/impacted materials, etc.)

All personal decontamination activities shall be performed with an attendant (buddy) to provide assistance to personnel that are performing decontamination activities. Depending on specific site hazards, attendants may be required to wear a level of protection that is equal to the required level in the EZ.

All persons and equipment entering the EZ shall be considered contaminated, and thus, must be properly decontaminated prior to entering the SZ.

Decontamination procedures may vary based on site conditions and nature of the contaminant(s). If chemicals or decontamination solutions are used, care should be taken to minimize reactions between the solutions and contaminated materials. In addition, personnel must assess the potential exposures created by the decontamination chemical(s) or solutions. The applicable Material Safety Data Sheet (MSDS) must be reviewed, implemented, and filed by personnel contacting the chemicals/solutions.

All contaminated PPE and decontamination materials shall be contained, stored, and disposed of in accordance with site-specific requirements determined by site management.

H.12.2 Decontamination Equipment

The equipment required to perform decontamination may vary based on site-specific conditions and the nature of the contaminant(s). The following equipment is commonly used for decontamination purposes:

- Soft-bristle scrub brushes or long-handled brushes to remove contaminants
- Hoses, buckets of water, or garden sprayers for rinsing
- Large plastic/galvanized wash tubs or children's wading pools for washing and rinsing solutions
- Large plastic garbage cans or similar containers lined with plastic bags for the storage of contaminated clothing and equipment
- Metal or plastic cans or drums for the temporary storage of contaminated liquids
- Paper or cloth towels for drying protective clothing and equipment

H.12.3 Personal/Equipment Decontamination

All equipment leaving the EZ shall be considered contaminated and must be properly decontaminated to minimize the potential for exposure and offsite migration of impacted materials. Such equipment may include, but is not limited to sampling tools, heavy equipment, vehicles, PPE, support devices (e.g., hoses, cylinders, etc.), and various handheld tools.

All employees performing equipment decontamination shall wear the appropriate PPE to protect against exposure to contaminated materials. The level of PPE may be equivalent to the level of PPE required in the EZ. Other PPE may include splash protection, such as face-shields and splash suits, and knee protectors. Following equipment decontamination, employees may be required to follow the proper personal decontamination procedures above.

The PPE to be used onsite is considered disposable and will be removed and containerized in the CRZ during decontamination activities. Suits and booties will be removed first, and gloves last.

1. For Glove removal:

- Grasp the cuff of the dominant hand and pull glove over the bulk of the hand, leaving the fingers inside the glove.
- Use the dominant hand to grasp the cuff of the non-dominant hand and pull the glove completely off (inside-out) and place inside of the dominant hand glove.
- Once removed, employee should only touch the inside material of the dominant hand glove.
- Thoroughly wash hands.

For larger equipment, a high-pressure washer may need to be used. Some contaminants require the use of a detergent or chemical solution and scrub brushes to ensure proper decontamination. Before heavy equipment and trucks are taken offsite, the SS and/or SSHO will visually inspect them for signs of contamination. If contamination is present, the equipment must be decontaminated.

For equipment, use the following steps for decontamination:

1. Remove majority of visible gross contamination in EZ
2. Wash equipment in decontamination solution with a scrub brush and/or power wash heavy equipment
3. Rinse equipment
4. Visually inspect for remaining contamination

5. Follow appropriate personal decontamination steps outlined above

All decontaminated equipment shall be visually inspected for contamination prior to leaving the CRZ. Signs of visible contamination may include an oily sheen, residue or contaminated soils left on the equipment. All equipment with visible signs of contamination shall be discarded or re-decontaminated until clean. Depending on the nature of the contaminant, equipment may have to be analyzed using a wipe method or other means.

H.13 Emergency Equipment and First Aid

A first aid kit will be available at all times while work is being conducted at the site.

H.14 Emergency Response and Contingency Procedures (ERP)

H.14.1 Pre-Emergency Planning

Prior to the start of site operations, the Emergency Coordinator (EC) will complete Table H-7 with any site-specific information regarding evacuations, muster points, communication, and other site-specific emergency procedures.

Table H-7 Emergency Planning		
Emergency	Evacuation Route	Muster Location
Chemical Spill	<ul style="list-style-type: none"> Upwind 	<ul style="list-style-type: none"> Site vehicles
Fire/Explosion	<ul style="list-style-type: none"> Upwind 	<ul style="list-style-type: none"> Site vehicles
Tornado/Severe Weather	<ul style="list-style-type: none"> Closest available tornado shelter 	<ul style="list-style-type: none"> Building # (TBD by SSOH)
Lightning	<ul style="list-style-type: none"> Closest available shelter 	<ul style="list-style-type: none"> Vehicle/Site Trailer
Additional Information		
Communication Procedures	Direct verbal communications. Must be supplemented when voices cannot be clearly perceived above ambient noise levels and when a clear line-of-sight cannot be maintained by personnel. Personnel will bring a mobile phone to the site to ensure that communications with local emergency responders is maintained, when necessary.	
CPR/First Aid Trained Personnel	James Watson	
Site-Specific Spill Response Procedures	Chemicals brought onsite will be limited to fuel for vehicles and small quantities of laboratory preservatives. In the event of a minor spill, sorbent material will be placed on the spill and then transferred to a container for disposal. Field personnel will immediately notify the PM who in turn will notify the account manager and the Department project representative.	

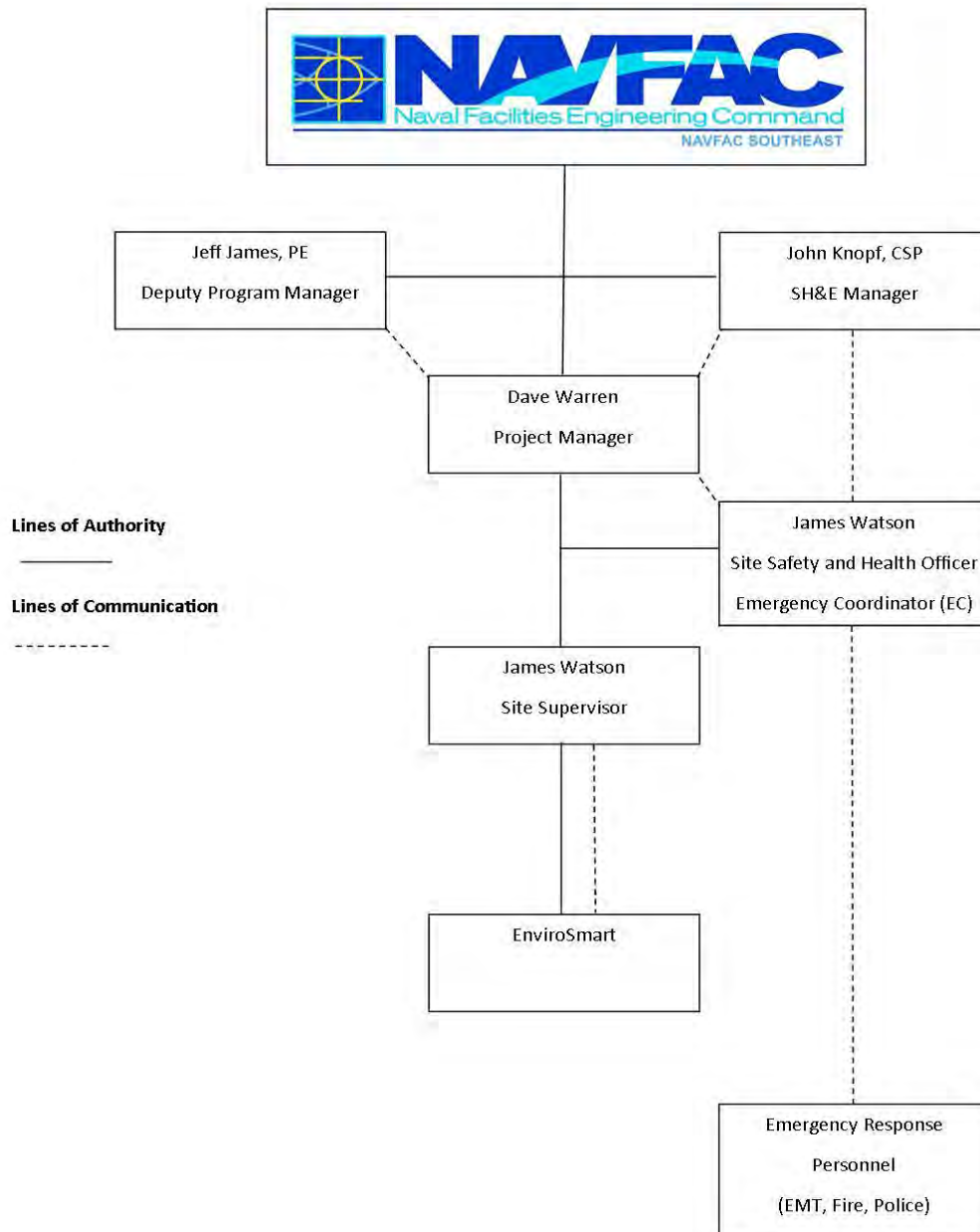


Figure H-14 — Personnel and Lines of Authority for Emergency Situations

The duties of the EC include:

- Implement the Emergency Action Plan (EAP) based on the identified emergency condition
- Notify the appropriate project and SH&E Department personnel of the emergency (Table 13-2)
- Verify emergency evacuation routes and muster points are accessible
- Conduct routine EAP drills and evaluate compliance with the EAP

H.14.2 Criteria and Procedures for Emergency Recognition and Site Evacuation

Although the potential for an emergency to occur is remote, an emergency action plan has been prepared for this project should such critical situations arise. The only significant type of onsite emergency that may occur is physical injury or illness to a member of the Resolution Consultants team. The EAP will be reviewed by all personnel prior to the start of field activities. On long term sites, a test of the EAP will be performed within the first three (3) days of the project field operations. This test will be evaluated and documented in the project records.

Four major categories of emergencies could occur during site operations:

1. Illnesses and physical injuries (including injury-causing chemical exposure)
2. Catastrophic events (fire, explosion, earthquake, or chemical)
3. Workplace Violence, Bomb Threat
4. Safety equipment problems

H.14.3 Decontamination and Medical Treatment of Injured Personnel

Personnel who may become injured onsite will require an appropriate level of decontamination to ensure that medical personnel or emergency service workers are not exposed to chemical hazards posed onsite. We expect our employees to encounter very low levels of chemical contaminants that should not pose a hazard to medical or emergency response personnel; however, we will still provide personal hygiene supplies. If clothing is heavily soiled and/or exhibits chemical odors, personnel shall have their clothing removed and provided temporary covering. Personnel will practice acceptable hygienic steps before being transported for medical treatment. If an injured employee is incapacitated, site personnel will perform this task for them.

H.14.4 Route Map to Emergency Medical Facilities and Phone Numbers for Emergency Responders

The route map to the nearest emergency medical facility is included as Attachment 5. Table H-8 lists the emergency contacts and their phone numbers.

Table H-8 Emergency Contacts			
Emergency Coordinators/Key Personnel			
Name	Title/Workstation	Telephone Number	Mobile Phone
Art Sanford	Navy RPM/NAVFAC SE	843-743-2135	
Dave Warren	Project Manager	834-884-0029	834-323-1682
James Watson	Site Supervisor	834-884-0029	843-860-0422
James Watson	Site Safety Health Officer	834-884-0029	843-860-0422
James Watson	Emergency Coordinator	834-884-0029	843-860-0422
John Knopf	Resolution Consultants Health & Safety Manager	901-372-7962	901-451-1464
Eric Allen	EnSafe CLEAN H&S contact	901-372-7962	901-359-6698
Herold Hannah	AECOM Regional SH&E Manager	412-904-3606	412-303-1199
Sean Liddy	AECOM District SH&E Manager		443-553-1403
Russ Reynolds	AECOM District SH&E Manager	864-234-3042	864-906-7309
Incident Reporting	AECOM Personnel	800-348-5046	
	EnSafe Personnel	Call John Knopf	
Ann-Alyssa Hill	AECOM TDG/IATA Shipping Expert	804-515-8506	804-640-4815
Kevin Arick	EnSafe TDG/IATA Shipping Expert	901-372-7962	901-356-3525
Organization/Agency			
Name			Telephone Number
Police Department (Base Security)			911
Fire Department (Base Fire)			911
Ambulance Service <i>(EMT will determine appropriate hospital for treatment)</i>			911
Emergency Hospital <i>(Use by site personnel is only for emergency cases)</i>			
Medical University of South Carolina			843-792-2300
169 Ashley Ave, Charleston, SC 29403			
Poison Control Center			800-222-1222
Pollution Emergency			800-292-4706
National Response Center			800-424-8802
Title 3 Hotline			800-424-9346
Public Utilities			
Name			Telephone Number
Call Before You Dig			811 Sunshine 811

H.14.5 Criteria for Alerting the Local Community Responders

Base emergency alerting phone numbers are expressed in the Table H-8 and should be followed in the event of an emergency.

Attachment 1
SSHP Acknowledgement Form

[illegible]

Attachment 2
SSHP Revision Table

CNC; Building 13 — Charleston, South Carolina

[illegible]

Attachment 3
Activity Hazard Analyses

Task Hazard Analysis (THA)

Activity/Work Task: Visual Inspection and Inventory		Overall Risk Assessment Code (RAC) (Use highest code)				L	
Project Location: Charleston Naval Complex Building 13		Risk Assessment Code (RAC) Matrix					
Project Number: 0888812793		Severity	Probability				
Date Prepared: 2/14/2013			Frequent	Likely	Occasional	Seldom	Unlikely
Prepared by (Name/Title): Eric Allen/ H&S Specialist		Catastrophic	E	E	H	H	M
		Critical	E	H	H	M	L
Reviewed by (Name/Title): Dave Warren/ Project Manager		Marginal	H	M	M	L	L
		Negligible	M	L	L	L	L
Notes: (Field Notes, Review Comments, etc.) EnSafe is acting as oversight only. Should environmental conditions warrant a change in PPE the SSHO will be notified.		Step 1: Review each "Hazard" with identified safety "Controls" and determine RAC (See above)					
		"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.					RAC Chart E = Extremely High Risk H = High Risk M = Moderate Risk L = Low Risk
		"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible					
		Step 2: Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard" on AHA. Annotate the overall highest RAC at the top of AHA.					
Job Steps	Hazards	Controls					RAC
General Physical Hazards	<ul style="list-style-type: none"> Slip/Trip/Fall Cold/Heat Stress Biological Hazards Cuts/Scrapes/Bruises Manual lifting 	<ul style="list-style-type: none"> Level D PPE required. Maintain a clean and organized work area. Watch your step and ensure proper footing. Provide drinking water and first aid kit. Wear appropriate clothing for weather conditions. Assess work area for poisonous plants and animals and communicate observations to avoid them. Wear appropriate work gloves for task Maintain 3 points of contact when climbing into vehicle Use proper lifting techniques by bending and lifting with legs and not back, and do not over extend or twist (Do not lift over 49lb. without assistance) 					L
	<ul style="list-style-type: none"> Adverse Weather 	<ul style="list-style-type: none"> Be aware of changing weather condition and provide appropriate weather gear. When work is halted due to inclement weather, personnel are to seek shelter in vehicles or building designated Shelter in Place (SIP) 					
Establish EZ and unload/set-up equipment	<ul style="list-style-type: none"> Traffic in roadways and parking lots 	<ul style="list-style-type: none"> Use combination of vehicles, cones, traffic barriers and caution tape. 					L
	<ul style="list-style-type: none"> Cuts/scrapes 	<ul style="list-style-type: none"> Wear leather gloves. 					
	<ul style="list-style-type: none"> Stacking heights 	<ul style="list-style-type: none"> Avoid stacking equipment and boxes. 					

Job Steps	Hazards	Controls	RAC
Decontamination	<ul style="list-style-type: none"> Chemical exposure potential Cuts/Scrapes Manual lifting of equipment 	<ul style="list-style-type: none"> Wear modified level D PPE when necessary (Tyvek and face shields or dust masks) Have portable eyewash on site Pour water from buckets into drums/containers as soon as practicable and lifting with legs. 	L

Chemical Hazards and Monitoring Procedures	
Chemical Hazard(s) (list):	N/A
Applicable HASP Section(s):	Section H.2.4
Monitoring Instrument(s):	N/A

Additional Safety Considerations
<ol style="list-style-type: none"> 1. Ensure all personnel have read the HASP 2. Ensure all equipment is equipped with necessary fire extinguishers (min 5 lbs BC). 3. Follow safe driving procedures. Always use the buddy system when moving vehicles. Plan your travel path ahead of time. Use maps and known construction zones to make your selection. Consult with the other team members before making any changes to travel path. 4. Use an equipment checklist to verify you have the appropriate equipment/tools for your tasks. Consult appropriate THAs or SOPs. 5. Stow all materials in vehicle properly, use appropriate cases and bags. Secure equipment in bed of truck with netting or straps. Do not leave any equipment loose in the cab or bed of the truck. It can cause property damage or serious injuries by falling from vehicle. 6. When securing equipment, watch for pinch points. Straps and netting can get caught on objects and snap back as well as trap a finger if hand placement is not correct. Use a buddy to help secure equipment when possible. 7. Maintain good housekeeping practices. When possible, use mechanical equipment to perform lifting of heavy objects. When lifting, follow safe lifting practices. Use the buddy system when lifting. 8. Wear nitrile gloves when collecting samples in soil to avoid dermal contact with potential contaminants. Be observant for tripping hazards, holes, stickups, vines, old fence wire, etc.

Additional Operational Safety Procedures	PPE
5-305, Hand & Power Tools 5-308, Manual Lifting 5-313, Wildlife, Plants, Insects 5-508, Hazardous Materials and Sample Shipping 5-509, Biological Hazards 5-511, Heat Stress 5-607, Manual Lifting	<p>LEVEL D</p> <ul style="list-style-type: none"> ANSI approved hard hat ANSI approved safety glasses Shirts with sleeves and full-length pants. ANSI approved steel safety-toe boots or approved equivalent. High visibility reflective traffic vest if near moving vehicles Nitrile Gloves Leather work gloves First aid kit (located in vehicle). Fire extinguisher (located in vehicle). <p>Modified LEVEL D (biohazard avoidance)</p> <ul style="list-style-type: none"> Tyvek suit <p>LEVEL C (upgrade per Air Monitoring Requirements)</p> <ul style="list-style-type: none"> APR with OV/P100 cartridges ; change cartridges daily

Equipment to be Used	Training Requirements/Competent or Qualified Personnel name(s)	Inspection Requirements
N/A	N/A	N/A

Acknowledgement

All employees, subcontractors, and visitors must sign the Acknowledgement form, in this section, before conducting field activities at this site.

By signing this form, Resolution Consultants employees agree that:

- I have read this Task Hazard Analysis and I understand the requirements of the THA.
- I will conduct work at this site in accordance with the requirements of the THA.

By signing this form, subcontractors and visitors agree that:

- I have read and understood the potential hazards associated with the site.
- I will ensure compliance with my company's policies on health and safety.

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Print Name & Company

Date

Signature

Attachment 4
Resolution Consultants Safety
Standard Operating Procedures

5-001-Safe Work Standards and Rules

1.0 Purpose and Scope

- 1.1 Demonstrates Resolution's commitment to the establishment and maintenance of workplaces free from recognized hazards.
- 1.2 This procedure applies to all Resolution based employees and operations.

2.0 Terms and Definitions

- 2.1 **Safety Violation:** Not following verbal or written safety policies, rules and procedures (e.g., guidelines, rules, horse play, failure to wear selected PPE, abuse of selected PPE, etc.).
- 2.2 **Safe Work Practices:** The do's and don'ts about carrying out a task or use of equipment, informing the worker about the hazards present and providing direction on how to safeguard against the hazard. Safe Work Practices are generally guidelines only.
- 2.3 **Safe Job Procedures:** Written step-by-step set of instructions about completing a specific task safely including control measures and responding to emergency situations.

3.0 References

- 3.1 Resolution Employee Handbook

4.0 Procedure

4.1 Standard Operating Procedures (SOPs)

- 4.1.1 Safe Work Practices and Safe Job Procedures are embodied in the SH&E Standard Operating Procedures and are available on Resolution's SH&E website.
- 4.1.2 Specific Safe Work Practices and Safe Job Procedures have been developed in conjunction with employees and with particular input from those who have significant experience.
- 4.1.3 Standard Operating Procedures have been developed to provide clear instruction regarding the safety and reporting requirements of staff and operations.

4.2 Inspections and Audits

- 4.2.1 **Project Managers**, supervisors and **Regional SH&E Managers** shall conduct project audits and office inspections to identify safe work practices and potential safety violations.

4.3 Roles and Responsibilities

- 4.3.1 All managers and supervisors are responsible for compliance with all SOP's and governmental requirements, and will be held responsible to prevent or bring any violations to the attention of the appropriate level of Management for corrective actions as per employing JV partner policies.
- 4.3.2 **Project Managers** (Including field task managers, supervisors) have overall responsibility for implementation of, and compliance with, this procedure.
- 4.3.3 **Regional SH&E Managers** provide guidance as to safe work standards, rules, requirements and guidelines.
- 4.3.4 **Human Resource Managers** (from employing JV partner) provide guidance and direction to managers and supervisors implementing the disciplinary process for safety violations (as defined in the Employee Handbook).
- 4.3.5 **Employees** are responsible for adhering to all Resolution safe work standards, rules, requirements and instructions and to provide input as appropriate.
- 4.4 Any employee who willfully disregards Resolution or client safety standards, rules or requirements is subject to disciplinary action.

5.0 Records

None.

6.0 Attachments

5-001 Safety Rules

5-002-Stop Work Authority for Unsafe Work

1.0 Purpose and Scope

- 1.1 This procedure establishes the requirements for Resolution personnel to stop work if they believe there is an imminent safety, health, or environmental risk as described below that will affect them, their co-workers, the public, or the environment.
- 1.2 This procedure applies to all Resolution-based employees and operations.

2.0 Terms and Definitions

- 2.1 **Discrepancy/Deficiency:** An omission or commission, a condition, or a situation that is in conflict with the procedures and requirements of Resolution's SH&E standards.
- 2.2 **Imminent Danger:** An impending or threatening situation that, if left uncorrected, is likely to result in serious injury, property damage, or environmental impairment.
- 2.3 **Potentially Dangerous:** Minor violations that present a low potential for serious injury, property damage, or environmental impairment.
- 2.4 **Stop Work Order:** A directive to cease Resolution-controlled work issued for failure to follow procedures, imminent danger situations/conditions, accumulation of safety violations, etc. The Stop Work Order will apply to Resolution and its direct subcontractors placed at risk by the situations or conditions.

3.0 References

None.

4.0 Procedure

4.1 Roles and Responsibilities

- 4.1.1 **Employees** are responsible for stopping all Resolution-directed work and for bringing it to the attention of the appropriate manager, Site Safety Officer, Project Manager, and/or Contractor representative any time an employee identifies a discrepancy, deficiency, or potentially dangerous condition or act that is likely to cause an unsafe or unhealthy situation or an imminent danger situation.
- 4.1.2 **Employees** may report unsafe working conditions anonymously, but they must provide sufficient detail and promptness to allow Resolution management and the SH&E staff to initiate corrective action.
- 4.1.3 **The Site Safety Officer or Local SH&E Representative** must initiate the development and implementation of corrective actions to eliminate the condition causing the Stop Work Order for Resolution employees and other personnel under Resolution's direct control affected by such condition. Report the details of the Stop Work Order and any corrective actions implemented to the **Project Manager** and the appropriate **Regional SH&E Manager**
- 4.1.4 **Project managers (field task managers, supervisors)**
 - Verify that corrective actions taken appropriately address the conditions leading to the Stop Work Order.
 - If Resolution has control over the circumstance that led to the condition, initiate additional corrective actions necessary to correct the conditions leading to the Stop Work Order. Otherwise, remain in communication with the persons or entities that are taking the corrective measures.
 - Communicate such corrective actions and the effects of such corrective actions on the project/office to the client and/or Region Management.

- Ensure that documentation related to the Stop Work Order and corrective actions is placed in the project/office file.

4.1.5 **Regional Business line Managers (regional, district and office managers)**

- Provide support, in accordance with our contractual responsibilities for the project, for the implementation of corrective actions and communications with clients.
- Ensure that no reprimand or reprisal is associated with the initiation of a Stop Work Order.

4.1.6 **Regional SH&E Managers**

- Provide technical guidance for the development and implementation of corrective actions.
- Communicate with the SH&E group and assist with the development of Shared Learning and Safety Alert notices.
- Report all instances when Stop Work Authority has been implemented to the Resolution Consultants SH&E Manager.

4.2 **Commitment**

4.2.1 It is Resolution's policy and firm commitment that employees are expected to stop their work to prevent unacceptable exposure to workplace hazards, including unsafe conditions or worker behaviors, without fear of reprimand or reprisal.

4.2.2 Cases involving reprisal, reprimand, or any attempt to discourage the initiation of Stop Work Orders or reporting of unsafe or unhealthy conditions or situations within Resolution should be immediately reported to the employee's **Manager, Human Resources Representative, and Regional SH&E Manager, Resolution Consultants SH&E Manager.**

4.3 **Authority**

4.3.1 Resolution's stop work authority applies to all work controlled by Resolution, its employees, and Resolution -controlled subcontractor work activities. All Resolution personnel are authorized to stop work in the event of an identified unsafe condition. If the responsible organization fails to provide resolution, or if at any time their acts or failure to act cause substantial harm or imminent danger to the health and safety of project employees, the public, or the environment, Resolution may issue an order stopping work in whole or in part. In the event that Resolution issues a Stop Work Order, an order issued by Resolution Consultants SH&E Manager (or his designee) authorizing the resumption of work must be in place prior to restarting work.

4.3.2 In most cases, a Stop Work Order affects only those areas immediately involved in the hazardous situation. Resolution may issue a Stop Work Order for a portion of the work area(s) or for an entire work area when unacceptable risks exist that cannot be mitigated by reasonable engineering controls, administrative actions, or personal protective equipment. The Stop Work Order will remain in effect until the responsible organization resolves the problem(s) and brings the work area(s) to satisfactory conformance with established SH&E requirements. Work will not resume until appropriate corrective actions have been completed, ensuring that the condition has been rectified. The Stop Work Order will apply to Resolution and its direct subcontractors placed at risk by the situations or conditions.

4.4 **Severity of Hazards**

4.4.1 **Imminent Danger Situations**

- Upon becoming aware of an imminently dangerous situation that Resolution does not control, the employee should immediately inform the persons or entities in control of such imminently dangerous activities and his or her project manager about the situation. If the activities pertain to work that is controlled by Resolution, then the employee may stop the work upon discovering an imminently dangerous situation and then immediately notify his project manager, who may determine the appropriate further action to be taken (including the issuance of a formal Stop Work Order).

- “Stopping work” for Resolution -controlled work includes stabilizing an imminent danger situation to the extent that it can be left unattended for a prolonged period of time until the issue is resolved.
- The person requesting the work stoppage will notify the organization responsible for the work.
- The responsible organization will notify Resolution project/office management immediately of any stop work action(s) taken to rectify the situation.
- An Resolution’s failure to comply with any Stop Work Order in whole or in part may result in disciplinary action. An Resolution subcontractor employee’s failure to comply with any Stop Work Order may result in immediate removal from the project and/or office location.

4.4.2 Potentially Dangerous Situations

- Informal stop work interventions to correct minor conditions (e.g., to remind workers to put on their hard hats, safety glasses, etc.) do not require formal notification.
- If the minor condition cannot be corrected, a formal Stop Work Order must be issued and work must not be resumed until the situation has been eliminated.

4.5 Management-issued Stop Work Orders

4.5.1 **Project Managers** and/or **SH&E Managers** may issue a formal Stop Work Order for Resolution-controlled work in the following situations:

- Imminent danger exists involving the public or employee’s safety and health or damage to the environment, facilities, or property.
- Continuing work or equipment usage will result in significant repair, rework, or removal.
- A project, or any segment of the project, is executed improperly or is out of compliance with applicable regulations or standards.

4.6 Resuming Work

4.6.1 Work associated with the affected area or operation will not resume unless all corrective actions identified in the applicable Stop Work Order have been completed and closed.

4.6.2 All personnel affected by the Stop Work Order will be instructed on the corrective actions and preventative measures taken.

5.0 Records

5.1 The completed Stop Work Order and any corrective action reports generated will be maintained at the project site for the duration of the project and placed in the closed project file.

6.0 Attachments

5-002 Stop Work Order

5-002- Stop Work Order

This form must be completed if any of the following Criteria are met:

1. Imminent danger exists involving the public or employees' safety and health, the environment, facilities, or property.
2. Continuing work or equipment usage will result in significant repair, rework, or removal.
3. There is a discrepancy, deficiency, or potentially dangerous condition or act that is likely to cause an unsafe or unhealthy situation or an imminent danger situation.

Project Name:			
Project Manager:		Project #:	
Reported by:		Date/Time:	
Office:		Address:	
Stop Work Order is the result of the following:			
Inspection/Audit <input type="checkbox"/> Environmental Impairment <input type="checkbox"/> Injury/Incident <input type="checkbox"/> Unsafe Condition <input type="checkbox"/> Unsafe Behavior/Act <input type="checkbox"/> Improper Scope of Work <input type="checkbox"/> Other <input type="checkbox"/>			
Stop Work Order (Describe):			

All Stop Work Orders will be sent to the Regional SH&E Manager for Review

Return to Work

The above Stop Work Order issues/concerns have been corrected and documented. By signing below, I certify that the above Stop Work Order scenario has been corrected and work is safe to resume.

Title	Print Name	Signature
Project Manager:		
Individual/party issuing Stop Work Order:		
Sub-Contractor Supervisor (if applicable):		

5-003-SH&E Training

1.0 Purpose and Scope

- 1.1 Resolution's Safety, Health and Environmental (SH&E) Training Program is designed to provide training for all personnel which address the safety needs of their assigned job duties and responsibilities.
- 1.2 This procedure applies to all Resolution based employees and operations.
- 1.3 Major objectives of the SH&E Training Program include:
- Identify accountability, responsibility, and authority pertaining to the SH&E training program requirements.
 - Establish minimum training course and/or instructor criteria to ensure compliance with applicable regulatory requirements as well as Resolution's SH&E Program requirements.
 - Define documentation and corresponding archive requirements for the training program.
 - Maintain consistency in SH&E training content throughout North America for Resolution.

2.0 Terms and Definitions

- 2.1 **Training Needs Assessment (TNA):** A documented or electronic selection process whereby each employee identifies SH&E training based on their job role(s), responsibility(s) and associated hazards, and reviews the selected course(s) with his/her supervisor for approval and provision.
- 2.2 **Learning Management System (LMS):** A documented or electronic process of recording the commitment of the TNA and the successful completion of the associated SH&E training material.
- 2.3 **SH&E Administrators:** Employees that are located in various offices who coordinate the staff and/or trainers for delivery of SH&E training and record training completion data into the LMS or maintain hard copy files of training data for the location(s).

3.0 References

None.

4.0 Procedure

The requirements included in this procedure are the minimum applicable for Resolution activities. Further training may be identified to meet local jurisdiction or client requirements.

4.1 Training Needs Assessment

- 4.1.1 For Resolution to provide the necessary SH&E training for all employees to safely perform their work, job hazards that each employee may be exposed to must be identified and appropriate training provided about those hazards.
- 4.1.2 Upon employment and annually thereafter, employees must review their SH&E training requirements by completing the SH&E Training Needs Assessment (TNA) form. Their supervisor will review and confirm these training requirements and confirm enrolment into the required training programs.
- 4.1.3 Training Needs Assessments must be reviewed if any employee has been assigned a significantly different job with new hazards or project reassignment.

4.2 Training Delivery

- 4.2.1 SH&E Training is delivered in several methods to meet Resolution's wide diversity of staff, office and project locations. The local **SH&E Administrator** can work with the **Regional SH&E Manager** to develop a Regional training schedule and appropriate methods of delivery.

- 4.2.2 Every employee must attend the required training to meet the commitment established in the TNA and to demonstrate successful participation and knowledge transfer by completing and passing the associated quizzes or examinations.

4.3 Internal Training

- 4.3.1 Internal training represents training that is performed by Resolution's internal resources and may include intranet and classroom-based training. Generally this training material is customized to meet the specific requirements of Resolution or the project.

- 4.3.2 Courses that are self-taught and individually paced and delivered via Resolution's intranet: These courses are developed and maintained by the **SH&E Department**. Resolution's intranet will also be used to provide training by an **SH&E Instructor** in a WebEx format to facilitate personnel training based in multiple locations.

- 4.3.3 Courses taught by an Resolution instructor in a classroom format: Trainers are SH&E Department-approved personnel using materials developed specifically to train Resolution employees. All training course curricula is reviewed and approved by the SH&E Department prior to provision of training.

4.4 External Training

- 4.4.1 External vendors conduct training that is not available through internal training sources. All external vendors are to be selected and pre-approved by the SH&E Department prior to any employee attending a training class.

- 4.4.2 Resolution will use Internet training to supplement internal training courses. All Internet-based safety training courses and providers must be approved by the SH&E Department prior to any employee participating in training. Employees will be provided sign-on privileges.

4.5 Project Specific Training

- 4.5.1 In the course of employment with Resolution, employees may be asked to participate in project work with activities new to them or activities for which they have let their safety, health or environmental training expire. Should this occur they must immediately inform their supervisor and not participate in any tasks with hazards for which they have not been trained.

- 4.5.2 **Project Managers** must review all employees scheduled to work on their projects for compliance with SH&E training for hazards present or anticipated on their particular project. **Project Managers** must not let any employee that does not have current training for the identified hazards work on their projects.

4.6 Training Tracking

- 4.6.1 Records documenting employee participation safety training will be maintained in accordance with applicable regulatory and Resolution SH&E Program requirements.

- 4.6.2 Each region/district is responsible for maintaining documentation of course completion by each individual employee. **SH&E Administrators** will generally maintain such documentation.

- 4.6.3 For any employee who cannot be entered into the electronic database i.e.: contract employees, subconsultant employees, client personnel, the District or Office **SH&E Administrator** is required to maintain an individual non-employee training file with hard copies of certification from any safety training records.

4.7 Training Program Management

- 4.7.1 **Regional SH&E Managers** will be responsible for verifying training vendors, Internet training courses, or any other external training programs used by their operating units to comply with applicable regulatory or legislative requirements and Resolution SH&E Program parameters. Resolution will not consider any training received through an unapproved vendor to be valid until reviewed and accepted by a **Regional SH&E Manager**.

- 4.7.2 Resolution's **SH&E** group may provide training support services (e.g., registration) for Resolution-approved programs in addition to training provided by individual business lines and outside vendors.

4.8 Roles and Responsibilities

4.8.1 **Employing JV Partner** is responsible for establishing adequate resources (budget, training staff, etc.) within the business line(s) to implement the identified SH&E training.

4.8.2 **Regional Managers** are responsible for supporting the SH&E training program, and for the implementation and enforcement of this procedure within their region. This includes:

- Allocating resources for the effective implementation of this program.
- Participating with the **Regional SH&E Manager** in the development of tools to identify, track and monitor the implementation of SH&E training.

4.8.3 **Project Managers** (including field task managers, supervisors) are responsible that all assigned personnel comply with the requirements of this program. They will also:

- Identify local **SH&E Administrators** to coordinate SH&E training and to handle the training program data for their district/department.
- Confirm that training requirements are reviewed with each employee, based upon anticipated hazards associated with current and probable job functions and past performance if the job has not changed.
- Confirm that a SH&E TNA is completed by each employee and their supervisor as part of an employee's new hire orientation and upon annual review.
- Identify supplemental employee training courses based on local/client requirements.
- Identify additional employee SH&E training requirements based upon prudent risk management considerations and local performance issues.
- Implement corrective actions when employees fail to meet training requirements.

4.8.4 **Resolution Consultants SH&E Manager** is responsible for the following:

- Establishing SH&E Training Program parameters and communicating same to corporate executive management.
- Providing the necessary tools, support, and staff for development of the SH&E training program.
- Developing a list and schedule of training courses, including routine recurring training for standard courses.
- Reporting/communicating training status to senior management.

4.8.5 **SH&E Group** is responsible for the following:

- Developing and maintaining the LMS.
- Developing a list and schedule of training courses, including routine recurring training for standard courses. Communicating such information accordingly.
- Developing a resource of Resolution on-line, vendor or classroom training materials.
- Developing a roster of approved SH&E courses and syllabi.
- Collaborating with the **Regional SH&E Managers** in course development and content.
- Auditing for compliance with training program parameters.
- Reporting the status of the SH&E Training Program to the **Group SH&E Director** and **Regional SH&E Managers**.

4.8.6 **Regional SH&E Manager** is responsible for the following:

- Working with Regional and Business Line management to verify all SH&E training needs are identified and captured in the LMS.
- Developing a schedule and performing internal safety training classes as requested by regional, district, office or **Project Managers**.
- Reviewing and approving qualifications of Resolution employees providing internal safety training.

- Approving training lesson plans and course agendas for all internal training courses.
- Approving external safety training vendors and on-line (Internet) training providers.
- Monitoring for compliance with training program requirements.

4.8.7 **SH&E Administrators** are responsible for the following:

- Inputting and maintaining records pertaining to all safety training courses, medical monitoring, and other safety events into the LMS.
- Assigning training courses to employees, based on approved TNA results.
- Maintaining a hardcopy file of employee training records, sign-in sheets and other SH&E records related to training (such as quizzes and course evaluations where available).
- Supporting employees in obtaining refresher training prior to expiration.
- Providing office, department, location or business lines managers training compliance reports at an interval agreed upon by manager.

4.8.8 **Employees** are responsible for the following:

- Reviewing with their supervisor the SH&E hazards they may be exposed to in their day-to-day functions, and requesting the training for that hazard by completing a SH&E TNA.
- Coordinating with their supervisor to take the required SH&E training course prior to performing tasks with identified hazards.
- Monitoring their own training expiration dates and coordinating with their local **SH&E Administrator** (and supervisor) for refresher training to prevent expiration of any required training certifications.
- Supplying copies of training completion certificates to the **SH&E Administrator** for inclusion in the LMS.

5.0 Records

None.

6.0 Attachments

6.1 5-003-SH&E Training Sign In Sheet

5-202-Competent Person Designation

1.0 Purpose and Scope

- 1.1 Outlines the process and minimum requirements necessary for classifying an Resolution employee as a “Competent Person” in one or more activity areas.
- 1.2 This procedure applies to all Resolution based employees and operations where Resolution is self-performing the identified activities and where Resolution controls projects performing the activities requiring a Competent Person. Client-mandated requirements may apply on a project-specific basis and shall be addressed in supplemental documents (e.g., Task Hazard Analysis or Health and Safety Plan).
- 1.3 It is recognized that regulations and legislation may contain alternate definitions for Competent Person and it will be the responsibility of the **Project Manager** to determine if conflicts exist between Resolution and applicable regulatory/legislative definitions and resolve the conflict.
- 1.4 When a qualified employee within Resolution is not available to be designated as the Resolution Competent Person, the **Project Manager** in coordination with their **Regional SH&E Manager** may designate an appropriately qualified and trained Contractor employee as the Competent Person for the project.

2.0 Terms and Definitions

- 2.1 **Competent Person:** One who is capable of identifying existing and predictable hazards in surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization and resources to take prompt corrective measures to eliminate them.
- 2.2 **HASP:** Project Health and Safety Plan.

3.0 References

None.

4.0 Procedure

- 4.1 The following activities require an individual to be designated as a competent person:
 - 4.1.1 Asbestos
 - 4.1.2 Blasting & Explosives
 - 4.1.3 Concrete & Masonry Construction
 - 4.1.4 Confined Spaces
 - 4.1.5 Control of Hazardous Energy (Lockout-Tagout)
 - 4.1.6 Cranes & Derricks
 - 4.1.7 Demolition
 - 4.1.8 Electrical Wiring Design & Protections
 - 4.1.9 Fall Protection
 - 4.1.10 Hearing Protection
 - 4.1.11 Heavy Equipment
 - 4.1.12 Ionizing Radiation
 - 4.1.13 Lead

- 4.1.14 Material Hoists & Personnel Hoists
- 4.1.15 Stairways & Ladders
- 4.1.16 Respiratory Protection
- 4.1.17 Rigging Equipment
- 4.1.18 Scaffolds
- 4.1.19 Steel Erection
- 4.1.20 Trench & Excavations
- 4.1.21 Underground Construction
- 4.1.22 Welding & Cutting
- 4.2 The Resolution competent person field functions are dependent on the project activities and Resolution's field function. Refer to each SH&E Standard Operating Procedure (SOP) for the activities listed above and the associated legislative (e.g., OSHA) standard to determine the details of responsibility. Generally, it is the Competent Person's responsibility to be onsite at all times when Resolution staff are performing work governed by this SOP, make daily inspections of the conditions and work activities, and take actions to control any hazards associated with those activities.
- 4.3 The *5-202-Competent Person Designation* shall be used on all projects for documenting Competent Person designations. It must be filled out completely and updated as necessary by the contractor.
- 4.4 **Roles and Responsibilities**
 - 4.4.1 A Competent Person in Resolution is an employee who functions in a technical role when either Resolution self-performs associated field work (above) or oversees and directs the work of subcontractors. For operations where Resolution is providing oversight of subcontractors (ex. drilling services), it is the subcontractors employee who is the Competent Person on-site for that phase of operation.
 - 4.4.1.1 Any Resolution employee considered for designation as a "Competent Person" shall:
 - Complete a Training Needs Assessment (TNA) with their Supervisor under the guidance of the **Regional SH&E Manager**, regarding competent person's requirements;
 - Obtain approval from their supervisor prior to enrolling in any Resolution-sponsored safety competent person training program.
 - Track his or her own training anniversary dates and arrange for appropriate refresher training at least 30 days prior to expiration of certification
 - 4.4.1.2 Contractor Competent Persons
 - Unless Resolution is self-performing, the Contractor is responsible for determining the safe means and methods of its work activities.
 - The Contractor is responsible for designating its Competent Person(s) for each category of work it undertakes as required above.
 - The Contractor's Competent Person is responsible for technically supporting the Contractor's site operations for the safe execution of its activities.
 - The Contractor's Competent Person should be knowledgeable about the work activities, compliance with the associated safety and health regulations, identifying and removing any attendant field hazards and the Contractor's work practices and procedures.
 - For work on Resolution controlled sites, the **Project Manager** confirms that the Contractor designates a Competent Person(s) for its activities. *5-202-Competent Person Designation* or the equivalent may be use for this purpose.

- 4.4.2 **Project Manager/Field Task Manager/Supervisor** are responsible for ensuring that all assigned personnel, including personnel utilized from other offices to support their operations, comply with the requirements of this procedure. The **Project Manager** shall:
- Designate the Competent Person based on the work activity using 5-202- *Competent Person Designation*;
 - Implement corrective actions when employees fail to meet training requirements;
 - Identify supplemental employee training needs based on local/client requirements;
 - Verify competent person training requirements are reviewed with each employee, based upon current and anticipated job functions and past performance on a routine basis;
 - Identify additional employees requiring competent person training based on this procedure;
 - For projects controlled by Resolution, when these activities are contracted to another party, secure the identity of the Contractor's Competent Person(s), provide them with a copy of this SOP to verify the Contractor's capability to comply with the requirements within, and obtain documentation to support the designation of the Contractor employee as a Competent Person for Resolution;
 - Verify the designation of the Competent Person for a specific activity is effectively communicated to field personnel on site during daily tailgate safety meetings.
- 4.4.3 The **Regional SH&E Manager** or designee will work with operations to assess the competency of all designated persons based on specific requirements outlined in this procedure. With the **Project Manager** or designee determining the work-specific Competent Person, the **Regional SH&E Manager** provides guidance as needed. The SH&E Department (i.e., **Regional SH&E Manager**) with operations is responsible for:
- Establishing competent person training/experience requirements and communicating these requirements to line management.
 - Monitoring the overall implementation of this SOP.
 - Monitoring field compliance of this procedure.
 - Providing technical assistance/support as requested by **Regional and District Managers**.
 - Performing internal safety training classes as requested by **Regional and District Managers**.
 - Supporting the **Project Manager** in establishing minimum competent person requirements for regulated job activities based on individual job descriptions, applicable regulatory requirements, operational considerations, and management directives.
 - Reviewing and approving as requested by designated operations representatives the Competent Person's qualifications for Resolution employees.
 - Develop and maintain a process to track employee training compliance and anniversary dates.

5.0 Records

- 5.1 Resolution Competent Person Designation forms shall be maintained in the project file.
- 5.2 Documentation as to daily inspections and corrective measures by the Resolution Competent Person shall be maintained in the project file.

6.0 Attachments

- 6.1 5-202-Competent Person Designation Form

5-208-Personal Protective Equipment Program

1.0 Purpose and Scope

- 1.1 Provide an effective Personal Protective Equipment (PPE) Program to protect Resolution employees from potential workplace safety and health hazards.
- 1.2 This procedure applies to all Resolution employees and operations.
- 1.3 The proper use of appropriate PPE, in combination with effective engineering and administrative controls, can provide Resolution employees with protection against potential workplace hazards and can reduce the potential for workplace injury and illness.

2.0 Terms and Definitions

- 2.1 **PPE:** Personal Protective Equipment
- 2.2 **ANSI:** American National Standards Institute

3.0 References

- 3.1 Occupational Safety and Health Administration (OSHA) PPE standard (29 CFR 1910.132) requires Resolution to assess workplace(s) to determine if hazards that necessitate the use of PPE exist in the workplace, and, if such hazards are present, to
 - 3.1.1 Select the appropriate types of PPE and
 - 3.1.2 Provide employees with training about the use and care of the selected PPE.

4.0 Procedure

4.1 Roles and Responsibilities

4.1.1 Regional SH&E Professional

- Provide guidance to Project Managers, Field Task Managers, Supervisors, and field staff on the assessment of hazards and the selection of PPE.
- Provide training materials to Project Managers, Field Task Managers and Supervisors for employee training.

4.1.2 Project Managers (Field Task Managers, Supervisors)

- Conduct Hazard Assessments to identify hazards present and to specify PPE appropriate for those hazards.
- Determine which of your staff members will require employee-issued PPE.
- Approve the purchase of company-issued PPE.
- Verify that appropriate PPE is utilized by your employees when required or necessary.

4.1.3 Employee

- In accordance with your training and instructions, utilize appropriate PPE that has been issued to them when required or necessary.
- Inspect your PPE prior to use to confirm that it is functional, and maintain your PPE in a clean and functional condition.
- Follow instructions and manufacturers' guidance on the care, use, and storage of your PPE.
- Prior to using any type of PPE, confirm that it is in good shape, free of dirt and debris, and that you are familiar with its correct use. Always make sure PPE fits adequately to perform the use intended.
- Refrain from wearing PPE outside of the work area for which it is required if doing so would constitute a hazard.

4.2 Hazard Assessment for Office Locations

Office Hazard Analysis will be completed for applicable tasks as required in 29 CFR 1910.132 following the guidelines as specified in OSHA Pamphlet 3151-12R 2003 (Personal Protective Equipment),

4.3 Hazard Assessment for Off-Site Locations

4.3.1 HAZWOPER Locations

- Each Health and Safety Plan (HASP) that is prepared for waste site investigations/remediation includes a hazard assessment for each proposed field activity. Task-specific PPE requirements are listed in the HASP. Therefore, the HASP will serve as the certificate of hazard assessment for each project that involves off-site work activities that require the use of PPE.

4.3.2 All Other Off-Site Locations

- The Task Hazard Analysis will serve as the certificate of hazard assessment for projects that involves offsite work activities that require the use of PPE. The checklist will be reviewed with the entire field team prior to arriving at the site.

4.4 Training

4.4.1 Staff will receive adequate instruction on the correct use, limitations, and assigned maintenance duties for the equipment to be used. The following information, at a minimum, will be covered during PPE training:

- What PPE is required.
- When it is required.
- Why it is required.
- How to properly don, doff, adjust, and wear the PPE described.
- The limitations of the PPE, including its expected useful life.
- How to properly care for, maintain, and dispose of the PPE.

4.4.2 Field staff are responsible for confirming that they have reviewed the operation manual for the PPE before work commences.

4.4.3 All staff will receive an orientation to the hazards on the job site as well as initial Field Safety orientation that outlines appropriate PPE requirements.

4.4.4 Resolution Consultants employees who have participated in the 40-hour HAZWOPER training course are considered to have met the employee training requirements of the PPE standard. The training certificates that are issued as documentation of successful completion of the 40-hour HAZWOPER course will also serve as documentation of training as required by the PPE standard. Employees who have not participated in the HAZWOPER training will be provided PPE training specific to your assignment and/or location. The PPE Facts Sheets (attached) can serve as the basis for training.

4.5 Determining the Need for PPE

4.5.1 Using the Task Hazard Assessment or HASP, the need for the following types of PPE will be evaluated.

4.5.2 PPE will:

- Be selected and used in accordance with recognized standards and provide effective protection.
- Not in itself create a hazard to the wearer.
- Be compatible, so that one item of PPE does not make another item ineffective.
- Be maintained in good working order and in a sanitary condition.

- 4.5.3 Prior to entering any regulated work area, confirm that you have access to or are equipped with the following CSA-approved PPE, appropriate to the site hazards:
- Head Protection
 - Eye & Face Protection
 - Foot Protection
 - Hi-Visibility Vests
 - Hearing Protection
- 4.5.4 After the hazard assessments have been completed, the Project Manager will select the appropriate PPE for each job category or task, as necessary. The selected equipment will be indicated on the hazard assessment. PPE will be provided to each employee appropriate for the hazards present. All PPE selected and purchased by Resolution will meet or exceed the American National Standards Institute (ANSI) standards, Canadian Standards Association (CSA) standards, or other standards as dictated by provincial, territorial, or state legislation.
- 4.6 **Eye and Face Protection**
- 4.6.1 The OSHA standard requires that Resolution employees use appropriate eye and face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acid and caustic liquids, chemical gases or vapors, and injurious light radiation. The standard further requires that eye protection provide side protection when there is a hazard from flying objects.
- 4.7 **Head Protection**
- 4.7.1 Protective helmets (hard hats) are required when employees are working in areas where there is a potential for falling objects to cause injury to the head. When working near exposed electrical conductors that could contact the head, helmets designed to reduce electrical shock will be worn.
- 4.8 **Foot Protection**
- 4.8.1 Protective footwear is required when employees are working in areas where there is a danger of foot injuries from falling and rolling objects or from objects piercing the sole and where an employee's feet are exposed to electrical hazards.
- 4.9 **Hand Protection**
- 4.9.1 Appropriate hand protection is required when employee's hands are exposed to hazards such as those from skin absorption of harmful substances, severe cuts and lacerations, severe abrasions, punctures, chemical burns, thermal burns, or harmful temperature extremes.
- 4.9.2 Chemically Resistant Clothing
- 4.9.3 Chemically resistant clothing is required when there is significant potential for the employee to come in direct contact with the chemicals he/she is handling. Tasks that involve chemical handling will be evaluated for the potential of splashing or spilling.
- 4.9.4 High-Visibility Apparel
- 4.9.5 High-visibility apparel with reflective banding (ANSI Class II and III garment) is required for all field activities in close proximity to moving traffic and other modes of transportation (transit, airlines, marine, etc.), in proximity to heavy equipment operations, or whenever otherwise specified in a project HASP. Color of apparel (orange or lime) may be client/project-specific.
- 4.10 **Personal Clothing**
- 4.10.1 For personal safety on the job site, do not wear
- Loose or unsecured clothing or loose fitting cuffs.
 - Greasy or oily clothing, gloves, or boots.
 - Torn or ragged clothing.

- 4.10.2 Neck chains are hazardous and will be worn under clothing so that they do not hang out. Long hair will be tied back or otherwise confined.
- 4.10.3 Clothing made of synthetic fibres can be readily ignited and melted by electric flash or extreme heat sources. Cotton or wool fabrics are recommended for general use.
- 4.11 **Specialized PPE**
- 4.11.1 In addition to basic PPE, additional specialized PPE may be required to provide appropriate protection to the employee. Refer to applicable OH&S legislation and related Standard Operating Procedures for additional information on PPE requirements.
- Fall Protection: Only full body harnesses with shock-absorbing lanyards will be used for personal fall arrest.
 - Respiratory Protection: Respiratory protection shall be selected based on the contaminant and concentration to which the employee will be exposed. Refer to 5-519 *Respiratory Protection Program* and the task- or project-specific Baseline Hazard Assessments for specific requirements.
 - Fire Resistant Clothing: Approved fire resistant outer clothing may be required at work locations with flammable or explosive materials or environments.
 - Other Head Protection: Operators and passengers (if permitted) of all terrain vehicles and snowmobiles will wear approved helmets.
 - Chemical Protective Clothing: Approved chemical protection appropriate to the hazard will be worn. Review applicable Material Safety Data Sheets (MSDSs) for appropriate PPE.
 - Protection from Drowning: Employees being transported by boat are required to wear life jackets. Employees exposed to any other drowning hazards are required to wear personal flotation devices. Life jackets and personal flotation devices will have the proper regulatory approval.
- 4.12 **PPE Supplies**
- 4.12.1 Each Resolution office will maintain a supply of safety equipment including safety glasses, gloves, and chemically resistant clothing based on the nature of their field activities. The Office Manager or designee will be responsible for maintaining this inventory. PPE that is required for large field efforts will be ordered by the Project Manager or their designee.
- 4.12.2 At a minimum, the office will review its PPE program annually.
- 4.13 **Obtaining Personalized Safety Gear**
- 4.13.1 The OSHA standard in 29 CFR 1910 - Subpart I / 29 CFR 1926 requires that protective equipment, including PPE for eyes, face, head, and extremities, protective clothing, and respiratory devices, be provided to employees wherever necessary by reason of hazards.
- 4.13.2 Employees are not expected to provide their own general PPE. Although each Resolution office stocks and issues various general issue safety gear such as hard hats, plain safety glasses, disposable gloves and coveralls, fall protection, and hearing protection, certain personalized safety gear such as prescription safety glasses, safety-toed (capped) boots, and cotton coveralls will be ordered and sized specifically for the user.
- 4.13.3 Most PPE will be provided to the employee at no charge, with the exception of the above personalized safety equipment (safety glasses, safety toed boots, washable coveralls). A partial cost reimbursement to the employee may be made based on legacy company practice or project stipulations.
- 4.13.4 **Prescription Safety Glasses**
- As with all hazards, staff will be notified of their potential for injury and will be provided with the appropriate PPE. If wearing contact lenses poses a hazard to the worker's eyes during work, the worker will be advised of the hazards and the alternatives to wearing contact lenses.
 - Eligibility

- Employees will wear safety glasses during activities that involve exposure to eye hazards such as flying particles, chemical splash, or certain types of radiation such as ultraviolet light from welding operations. Typically, the following types of field activities will require the use of safety glasses:
 - Site investigation or remediation and construction activities.
 - Stack monitoring and other types of air emissions monitoring.
 - Audits and assessments in industrial or manufacturing facilities.
 - Activities conducted within laboratories.
 - Activities at client facilities where safety glasses are required.
- Eligibility to obtain prescription safety glasses will be determined by the employee's supervisor based upon the guidance above.
- Procurement of Prescription Safety Glasses
 - Except for eye examinations, associated prescription eyewear costs will be paid by Resolution. The employee may be asked to pay an optician's dispensing fee, which may be submitted on an expense report for reimbursement. Because eye examinations are not covered, employees who have had recent eye examinations should contact the eye care professional in advance to determine their procedure for handling a current prescription.
 - Employees who are eligible will be allowed to order one pair of prescription safety glasses every other year from the selection of glasses offered by the program.
 - Contact the Regional SH&E Professional for guidance on the procurement of prescription safety glasses.

4.13.5 Safety Toed Boots/Shoes

- Eligibility
 - Employees will wear safety boots/shoes during activities that pose the potential for foot injury from dropped objects or penetrations through the sole. Typically, safety toed boots/shoes will be required for the same type of activities, with the exception of laboratory activities, for which safety glasses are required. In addition, work around all types of heavy equipment will typically require the use of safety shoes.
 - Eligibility to obtain safety shoes will be determined by the employee's supervisor based upon the guidance above.
- Procurement of Safety Shoes
 - Eligible employees will be allowed to purchase one pair of safety shoes every other year.
 - Employees who have been authorized to purchase safety shoes by their supervisor should consult the Regional SH&E Manager for obtaining for detailed instructions on how and where to purchase the equipment. The style chosen (i.e., boot or shoe) should be determined based upon the application. For example, low cut shoes may be appropriate for audits and assessments in light industry applications, while safety boots will be more appropriate for environmental remediation, construction, and heavy industry work with significant foot hazards. Before purchasing, the employee is required to verify that the safety boots or shoes meet the specifications above.
 - After the purchase, an employee expense report, including a dated receipt for the shoes, should be submitted for approval and reimbursement. Resolution will reimburse the employee up to a amount that is specified by the SH&E Department or Regional Operations management.

4.13.6 Reusable Coveralls

- Eligibility

- Reusable cotton (or some other washable fabric) coveralls may be made available to employees who regularly perform field work based on conditions. Coveralls can be worn over personal clothing to help protect and keep them clean.
- Eligibility to obtain washable coveralls will be determined by the employee's supervisor based upon the guidance above.

5.0 Records

None.

6.0 Attachments

None.

05-210-Tailgate Safety Meeting Log

This sign-in log documents the topics of the tailgate safety briefing and individual attendance at the briefing. Personnel who perform work operations onsite are required to attend each safety briefing and acknowledge their ability to ask questions and receipt of such briefings daily. Please provide a brief narrative of the following topics as applicable to the Project.

Name of Meeting Leader

Signature

PROJECT NAME & LOCATION

PROJECT NO.

DATE/TIME

WEATHER CONDITIONS

TOPIC

Discussion – check one

Today's Scope of Work (All tasks)	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Access / Egress / Slips, Trips, & Falls	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Schedule / New Work / Scope Changes	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Smoking, Eating, & Drinking	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Reviewed Procedures, THA, etc.	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Washroom / Facilities Location	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Emergency Action Plan & Procedures	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Heat/Cold Stress	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Communications Protocol	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Exclusion Areas Barricades / Cones	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Required PPE	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Required Permits, Passes, Keys, etc.	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Required Monitoring / Instruments	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Decon Procedures / IDW Mgmt.	<input type="checkbox"/> yes <input type="checkbox"/> n/a
Site Control / Work Zones / Security	<input type="checkbox"/> yes <input type="checkbox"/> n/a	Eqpmt. Inspections/Safety Checklists	<input type="checkbox"/> yes <input type="checkbox"/> n/a

COMMENTS/OTHER

Tailgate Meeting Attendees

Print Name

Signature

SIX QUESTIONS FOR SUCCESS – As your final preparedness take two minutes to think through and answer these questions:

1. What are we about to do?
2. What equipment are we going to use?
3. Have I/we been trained to use this equipment?
4. Have I/we been trained to do this job?
5. How can I/we be hurt?
6. How can I/we prevent this incident?

*If you and your team aren't prepared to do the assigned work, **STOP WORK**, and take time to properly prepare.*

END OF DAY SIGN-OFF:

Site Safety Officer Signature

- ☐ No Incidents Occurred
- ☐ Number of Near Misses/Observations Reported
- ☐ All Incidents Reported the Incident Reporting Line

LESSONS LEARNED/COMMENTS/OTHER

05-505-Cold Stress Prevention

1.0 Purpose and Scope

- 1.1 To protect workers from the severest effects of cold stress (hypothermia) and cold injury and to identify exposures to cold working conditions under which it is believed nearly all workers can be repeatedly exposed without adverse health effects.
- 1.2 This procedure applies to all Resolution Consultants employees and operations.

2.0 Terms and Definitions

- 2.1 **Cold Stress:** The production of physiological effects due to cold temperatures and/or wind chill.
- 2.2 **Frostbite:** Freezing of tissue, often resulting in tissue death.
- 2.3 **Hypothermia:** Condition of reduced core body temperature resulting in loss of dexterity, loss of mental alertness, collapse, and possible death.
- 2.4 **Wind Chill:** The effect of air movement on apparent temperature in a cold environment.

3.0 References

None.

4.0 Procedure

4.1 Restrictions

- 4.1.1 Staff working in extreme cold or snow for extended periods of time away from a shelter or vehicle shall not work alone.
- 4.1.2 All staff working in extreme cold or snow conditions should understand the following guidelines for preventing and detecting hypothermia and frost bite.
- 4.1.3 If you experience frost bite or hypothermia, find shelter and warmth and contact a medical practitioner if symptoms persist.
- 4.1.4 Take frequent short breaks in warm dry shelters to allow your body to warm up. Limit time of exposure.
- 4.1.5 Try to schedule work for the warmest part of the day or when the wind is most calm.
- 4.1.6 Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- 4.1.7 Because prolonged exposure to cold air or to immersion in cold water at temperatures even well above freezing can lead to dangerous hypothermia, whole-body protection shall be used.

4.2 Roles and Responsibilities

- 4.2.1 Project Managers/Field Task Managers:
 - Implement cold stress prevention measures as applicable at each work site.
 - Develop/coordinate a work-warning regimen, as applicable.
 - Confirm cold stress hazard assessments/evaluations were completed for the planned activities.
 - Assign personnel physically capable of performing the assigned tasks.
 - Confirm personnel are properly trained to recognize the symptoms of cold stress.

4.2.2 Regional SH&E Managers:

- Conduct/support cold stress assessments/evaluations.
- Conduct/support incident investigations related to potential cold stress-related illnesses.
- Assist project teams develop appropriate work-warming regimens.
- Provide cold stress awareness training.

4.2.3 Supervisors:

- Identify the tasks that may be most impacted by cold stress and communicate the hazard to the assigned employees.
- Confirm that employees have been trained on the recognition of cold stress-related illnesses.
- Confirm that adequate supplies of warm fluids/drinks are readily available to employees.
- Confirm that a warm/sheltered rest area is available, as applicable.
- Conduct cold stress monitoring, as applicable.
- Implement the work-warming regimen.
- Confirm that first aid measures are implemented once cold stress symptoms are identified.
- Confirm that personnel are physically capable of performing the assigned tasks and are not in a physically compromised condition.

4.2.4 Employees:

- Observe each other for the early symptoms of cold stress-related illnesses.
- Maintain an adequate intake of available fluids.
- Report to work in a properly vested condition.
- Report all suspected cold stress-related illnesses.

4.3 **Training**

4.3.1 Before they begin work, project staff who may be exposed to cold stress will be informed of the potential for cold stress and how to prevent cold stress.

4.3.2 Personnel potentially exposed to cold stress will receive training including, but not limited to:

- Sources of cold stress, the influence of protective clothing, and the importance of acclimatization
- How the body loses heat.
- Recognition of cold-related illness symptoms.
- Preventative/corrective measures.
 - Employees will be informed of the harmful effects of excessive alcohol consumption in a cold stress environment.
- First aid procedures for symptoms related to cold stress.

4.4 **Personal Protective Equipment**

4.4.1 Wear multiple layers of clothing to maintain immobile layers of warm air next to the body.

4.4.2 Avoid cotton, especially blue jeans.

4.4.3 Wear proper clothing, including head coverings and gloves or mittens for cold, wet, and windy conditions.

4.4.4 Use insulated footwear with adequate traction to prevent slips and falls.

4.4.5 Confirm extra blankets or sleeping bags are on-site.

4.4.6 Sunglasses and sunscreen should be used when there is a persistent combination of snow and direct sun.

4.4.7 If shelter is not readily available, confirm that staff carry fire starter materials (see the Safe Work Practice for Wilderness Isolation).

4.4.8 Pack warm, sweet drinks, and high-calorie food for snacks.

4.5 General Cold Stress Prevention Measures

4.5.1 In order to prevent hypothermia:

- Wear multiple layers of clothing to maintain immobile layers of warm air next to the body. Avoid cotton, especially blue jeans.
- When active, ventilate excess heat by opening or removing outer layers of clothing to avoid sweating.
- Start with the mitten or gloves, unless protection from ice, snow, or cold metal surfaces is needed.
- Next remove head gear and neck wrappings.
- Then coats/parkas should be opened at the waist and sleeves.
 - Finally, layers of clothing should be taken off.
 - When resting or tired, or colder conditions are encountered, add additional layers of clothing/ close outer layers in the reverse of the above order, or get out of the cold. Have a sweet drink but do not indulge in heavy eating.
 - Garments worn to keep out rain and spray should also allow water vapor to escape.
 - Take advantage of heat from the sun and stay out of the wind as much as possible.
 - Have available emergency shelter providing protection from wind and rain and insulation from the ground.
 - Replace wet clothing. If wet clothing cannot be replaced, then cover it with a layer of non-breathing material to prevent evaporation. Place an insulation layer over this non-breathing material.
 - Get adequate rest; conserve energy.
 - Get adequate nutrition to replenish energy stores; rest after meals.
 - Drink adequate fluids to avoid dehydration.
 - If any project staff member shows signs of hypothermia, stop and treat him/her.

4.5.2 In order to prevent frostbite:

- Dress to prevent hypothermia and protect the feet and hands.
- Avoid obstruction of circulation by, for example, tight boots or tightly fitting clothing.
- Avoid nicotine, particularly cigarettes, and alcohol.
- Keep ears and nose covered and out of the wind.
- Frostbite of the corneas of the eyes can be prevented by protective goggles.
- Adopt a “buddy system” of constantly watching the faces of others in the party for white skin tissue, which is evidence of frostbite (frostnip).
- Practice constant personal vigilance for signs of trouble in one’s own fingers and toes; when in doubt, investigate thoroughly before it is too late.

4.5.3 Adequate, insulating dry clothing that will help maintain core temperatures above 96.8°F (37°C) shall be provided to workers if work is performed in air temperatures below 40°F (5°C). Wind chill cooling rate and the cooling power of air are critical factors. The higher the wind speed and the lower the temperature in the work area, the greater the insulation value of the protective clothing required.

4.5.4 An Equivalent Chill Temperature (ECT) chart relating the actual dry bulb air temperature and the wind velocity is presented in *05-505-Temperature Thresholds*. Unless unusual or extenuating circumstances exist, cold injury to other than hands, feet, and head is not likely to occur without the development of the initial signs of hypothermia. Superficial or deep local tissue freezing will occur only at temperatures below 32°F (0°C) regardless of wind speed. However, older workers or workers with circulatory problems require special precautionary protection against cold injury. The use of extra insulating clothing and/or a reduction in the duration of the exposure period are among the special precautions that should be considered.

- 4.5.5 Continuous exposure of skin should not be permitted when the air speed and temperature results in an ECT of -25°F (-32°C) or below.
- 4.5.6 At air temperatures of 40°F (5°C) or less, it is imperative that workers who become immersed in water or whose clothing becomes wet be immediately removed from the cold environment, provided a change of clothing, and be treated for hypothermia.
- 4.5.7 If the air velocity at the job site is increased by wind, draft, or artificial ventilating equipment, the cooling effect of the wind should be reduced by shielding the work area or by wearing an easily removable windbreak garment.
- 4.5.8 Adequate protection, such as general ventilation, shall be incorporated into any warming shelter design to prevent carbon monoxide poisoning.
- 4.5.9 Operation of internal combustion or similar devices within warming shelters is prohibited.
- 4.5.10 If the available clothing does not give adequate protection to prevent hypothermia or frostbite, work should be modified or suspended until adequate clothing is made available or until weather conditions improve.

4.6 Cold Stress Prevention Measures for the Hands

- 4.6.1 Special protection of the hands is required to maintain manual dexterity for the prevention of accidents including, but not limited to the following:
- If fine work is to be performed with bare hands for more than 10 to 20 minutes in an environment below 60°F (15°C), special provisions should be established for keeping the workers' hands warm. For this purpose, warm air jets, radiant heaters (fuel burner or electric radiator), or contact warm plates may be utilized. Metal handles of tools and control bars should be covered by thermal insulating material at temperatures below 30°F (-1°C).
 - If the air temperature falls below 60°F (15°C) for sedentary work, 40°F (5°C) for light work, or 20°F (-6°C) for moderate work, and fine manual dexterity is not required, workers should use gloves.
- 4.6.2 To prevent contact frostbite, workers should wear anti-contact gloves:
- When cold surfaces below 20°F (-6°C) are within reach, each worker should be warned to prevent inadvertent contact by bare skin.
 - If the air temperature is 0°F (-18°C) or less, workers should protect their hands with mittens. Machine controls and tools for use in cold conditions should be designed so that they can be handled without removing the mittens.
- 4.6.3 Provisions for additional total body protection are required if work is performed in an environment at or below 40°F (5°C). The workers should wear cold protective clothing appropriate for the level of cold and physical activity.
- 4.6.4 Additional Cold Stress Prevention Measures. For work practices at or below 10°F (-12°C) ECT, the following will apply:
- The worker should be under constant protective observation (buddy system or supervision).
 - The work rate should not be so high as to cause heavy sweating that will result in wet clothing. If heavy work is being performed, rest periods should be taken in heated shelters and opportunities to change into dry clothing should be provided.
 - New employees should not be required to work full time in the cold during the first days of employment until they become acclimated to the working conditions and required protective clothing.
 - The weight and bulkiness of clothing should be included in estimating the required work performance and weights to be lifted by the worker.
 - The work should be arranged in such a way that sitting still or standing still for long periods is minimized. Unprotected metal chair seats should not be used. The worker should be protected from drafts to the greatest extent possible.
 - Workers should be instructed in safety and health procedures, which should address:
 - Proper rewarming procedures and appropriate first aid treatment.

- Proper clothing practices.
- Proper eating and drinking habits.
- Recognition of impending frostbite.
- Recognition of signs and symptoms of impending hypothermia or excessive cooling of the body even when shivering does not occur.
- Safe work practices.

- 4.6.5 Eye protection for workers employed outdoors in a snow and/or ice-covered terrain should be supplied. Special safety goggles to protect against blowing ice crystals and ultraviolet light and glare (which can produce temporary conjunctivitis and/or temporary loss of vision) should be required when there is an expanse of snow coverage causing a potential eye exposure hazard.
- 4.6.6 Workers handling evaporative liquid (gasoline, alcohol, or cleaning fluids) at air temperatures below 40°F should take special precautions to avoid soaking of clothing or gloves with the liquids because of the added danger of cold injury due to evaporative cooling. Special note should be taken of the particularly acute effects of splashes of “cryogenic fluids” or those liquids with a boiling point that is just above ambient temperature.
- 4.6.7 Trauma sustained in freezing or subzero conditions requires special attention, because an injured worker is predisposed to cold injury. Special provisions should be made to prevent hypothermia and freezing of damaged tissue in addition to providing for first aid treatment.

4.7 Work-Warming Regimen

- 4.7.1 If work is performed continuously in the cold at an equivalent chill temperature (ECT) at or below -15°F (-26°C), heated warming shelters (tents, cabins, rest rooms, etc.) should be made available nearby. The workers should be encouraged to use these shelters at regular intervals; the frequency will depend on the severity of the environmental exposure.
- 4.7.2 The onset of heavy shivering, minor frostbite (frostnip), the feeling of excessive fatigue, drowsiness, irritability, or euphoria are indications for immediate return to the shelter.
- 4.7.3 When entering the heated shelter, the outer layer of clothing should be removed and the remainder of the clothing should be loosened to permit sweat evaporation or a change of dry work clothing provided.
- 4.8 A change of dry work clothing should be provided as necessary to prevent workers from returning to the cold environment with wet clothing.

5.0 Records

None.

6.0 Attachments

- 6.1 05-505-Temperature Thresholds
- 6.2 05-505-Symptoms and Treatment
- 6.3 05-505-Cold Exposure

05-505-Temperature Thresholds

1.0 Purpose and Scope

1.1 The following table gives apparent temperatures (wind chill) for various combinations of wind and air temperature, as well as guidelines to the danger of skin exposure.

Table 1. Wind Chill Chart (C)

Actual Temp (°C)	Wind Speed in km/hour									
	8	16	24	32	40	48	56	64	72	80
	Ambient Temperature (°C)									
0	-2	-8	-11	-14	-16	-17	-18	-19	-19	-20
-5	-7	-14	-18	-21	-23	-25	-26	-27	-28	-28
-10	-12	-20	-25	-28	-31	-33	-34	-35	-36	-36
-15	-18	-26	-32	-35	-38	-40	-42	-43	-43	-44
-20	-23	-32	-38	-43	-46	-48	-50	-51	-52	-52
-25	-28	-38	-45	-50	-53	-56	-57	-59	-59	-60
-30	-33	-45	-52	-57	-61	-63	-65	-67	-67	-68
-35	-39	-51	-59	-64	-68	-71	-73	-75	-75	-76
-40	-44	-57	-65	-71	-75	-79	-81	-83	-83	-84
-45	-49	-63	-72	-78	-83	-86	-89	-90	-91	-92
-50	-54	-69	-79	-85	-90	-94	-96	-98	-99	-100

Note: A. Little Danger: if less than one hour of exposure to dry skin.

B. Danger: Exposed flesh freezes within one minute.

C. Great Danger: Flesh may freeze within 30 seconds.

Source: *Threshold Limit Values (TLV™) and Biological Exposure Indices (BEI™) booklet; published by ACGIH, Cincinnati, Ohio.

Table 2. Equivalent Chill Temperature Chart (F)

Estimated Wind Speed (mph)	Actual Temperature Reading (°F)									
	50	40	30	20	10	0	-10	-20	-30	-40
	Equivalent Chill Temperature (°F)									
Calm	50	40	30	20	10	0	-10	-20	-30	-20
5	48	37	27	16	6	-5	-15	-26	-36	-47
10	40	28	16	4	-9	-24	-33	-46	-58	-70
15	36	22	9	-5	18	-32	-45	-58	-72	-85
20	32	18	4	-10	-25	-39	-53	-67	-82	-96
25	30	16	0	-15	-29	-44	-59	-75	-88	-104
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109
35	27	11	-4	-20	35	-51	-67	-82	-98	-113
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116
Wind speeds >40 mph have little additional effect	LITTLE DANGER				INCREASING DANGER			GREAT DANGER		
	Trenchfoot and immersion foot may occur at any point on this chart.									

Table 3. Work-Warming Schedule Guidelines

Air Temp. (Sunny Sky) °F	No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind		25 mph Wind		Air Temp. (Sunny Sky) °C																				
	Max. Work Period	Breaks	Max. Work Period	Breaks	Max. Work Period	Breaks	Max. Work Period	Breaks	Max. Work Period	Breaks	Max. Work Period	Breaks																					
above 5°	Normal Work Schedule		Normal Work Schedule		Normal Work Schedule		Normal Work Schedule		Normal Work Schedule		Normal Work Schedule		above -15°																				
5° to -1°											100 min	2	-15° to -17°																				
0° to -4°									75 min	2	-18° to -20°																						
-5° to -9°					100 min	2	75 min	2	55 min	3	-21° to -22°																						
-10° to -14°					100 min	2	75 min	2	55 min	3	40 min	4	-23° to -25°																				
-15° to -19°	100 min 2		100 min	2	75 min	2	55 min	3	40 min	4	30 min	5	-26° to -28°																				
-20° to -24°			75 min	2	55 min	3	40 min	4	30 min	5	Cease Work		-29° to -31°																				
-25° to -29°			55 min	3	40 min	4	30 min	5	Cease Work				-32° to -34°																				
-30° to -34°			40 min	4	30 min	5	Cease Work						-35° to -37°																				
-35° to -39°			30 min	5	Cease Work								-38° to -39°																				
-40° to -44°	30 min 5		Cease Work										-40° to -42°																				
-44° & below													-43° & below																				

Modified from ACGIH 2002 Threshold Limit Values for Chemical Substances and Physical Agents.

Note 1: Schedule describes the maximum continuous duration of work and number of 10-15 minute breaks to be observed during any 4-hour work period and assumes that period will be followed by an extended warm-up period (e.g., lunch). Allowed breaks should be taken in a warm environment.

Note 2: Schedule applies to moderate to heavy work performed by acclimated workers wearing appropriate layered clothing. For light to moderate work apply the schedule for conditions one step lower. For unacclimated workers apply the schedule for conditions two steps lower. These modifications are additive.

Note 3: For work under 25%–50% overcast/clouds, apply the schedule for conditions one step lower. For work at night or under greater than 50% overcast/clouds, apply the schedule for conditions two steps lower. These modifications are additive with any applicable modifications from Note 2.

Note 4: For wind speeds in excess of 25 mph, cease all nonemergency work when temperatures fall below 5°F.

05-505-Symptoms and Treatment

1.0 Cold Stress-related Illnesses

1.1 Frostbite

1.1.1 Frostbite is a localized cold injury characterized by freezing of the tissues with ice crystal formation.

1.1.2 This injury is almost always limited to the upper and lower extremities or to such appendages as the ears or nose.

1.1.3 Conditions conducive to frostbite include sub-zero temperatures, hypothermia (most important predisposing factor), dehydration, obstruction of the blood supply to the extremities (by constricting clothing, especially on the feet or at the wrists or ankles), contact with cold metal, contact with organic liquids (such as gasoline or solvents that have been left outdoors in sub-zero temperatures), use of substances that cause vasoconstriction (such as smoking tobacco), or other injury or shock.

1.1.4 Symptoms of frostbite include:

- Pain in the involved tissue is the earliest symptom.
- Sudden and complete cessation of cold or discomfort in affected fingers or toes, often followed by a pleasant feeling of warmth.
- Subsequently the only symptom may be the absence of any sensation in the frozen part.
- Paleness in the affected tissues.
- Firm or hard tissues.
- Purple tissue, if a large area, such as an entire hand or foot, is frostbitten.

1.1.5 If exposure occurs in temperatures that are below freezing (32°F or below), frostbite or trench foot (immersion foot) may accompany or complicate the symptoms of hypothermia. Frostbite is the freezing of living tissues with a resultant breakdown of cell structure. Symptoms due to frostbite may include, but is not limited to:

- Superficial redness of the skin
- Slight numbness
- Blisters
- Obstruction of blood flow (ischemia)
- Blood clots (thrombosis)
- Skin discoloration due to insufficient oxygen in the blood (cyanosis)

1.1.6 Frostbite may occur if the skin comes into contact with objects with a surface temperature below freezing, such as metal tool handles. Trench foot is caused by continuous exposure to cold combined with persistent dampness or immersion in water. Injuries in this case include permanent tissue damage due to oxygen deficiency, damage to capillary walls, severe pain, blistering, tissue death, and ulceration.

1.1.7 Additionally, cold exposures may either induce or intensify vascular abnormalities. These include chilblain (a swelling or sore), Raynaud's disease, acrocyanosis (blueness of hands and feet) and thromboangiitis (inflammation of the innermost walls of blood vessels with accompanying clot formation). Workers suffering from these ailments should take particular precautions to avoid chilling.

1.2 Hypothermia

1.2.1 Hypothermia is a lower than normal body temperature that occurs when outer cold cools the body faster than the body can produce heat to stay warm.

1.2.2 Hypothermia can be caused by exposure to wind, cold, and/or moisture. The combination of wind, cold, and moisture can be deadly.

1.2.3 Early warning signs of hypothermia:

- Feeling of being cold and tired.
- Heavier breathing and increased pulse rate.
- Tendency to keep moving (e.g., stamping feet, rubbing hands, continued walking/pacing).
- Goose bumps, holding arms tightly wrapped around the body, hunching of shoulders.

- Shivering.
- 1.2.4 Hypothermia damages both the body's internal temperature mechanisms (hypothalamus) and the peripheral mechanisms to prevent heat loss (vasoconstriction and perspiration.) These effects may last up to three years after the initial hypothermia episode. Symptoms of hypothermia may include, but are not limited to:
- Pain in the extremities.
 - Severe shivering and numbness.
 - Low core body temperature.
 - Drowsiness and muscular weakness.
 - Apathy.
 - Mental confusion.
 - Loss of consciousness.
 - Shock.
 - Decreasing pulse and breathing rate.

2.0 Recommended Treatment for Cold Stress-related Illnesses

2.1 Frostbite

- 2.1.1 Wrap the victim in woolen blanket and keep dry until he or she can be brought inside.
- 2.1.2 Remove the victim from the cold environment.
- 2.1.3 Do not rub, chafe, or manipulate frozen parts.
- 2.1.4 Place the victim in warm water (102°F to 105°F) and make sure the water remains warm. Test the water by pouring it on the inner surface of your forearm. Never thaw affected body parts if the victim has to go back out into the cold; refreezing can cause significant tissue damage.
- 2.1.5 Do not use hot water bottles or a heat lamp, and do not place the victim near a hot stove.
- 2.1.6 Do not allow the victim to walk if his or her feet are affected.
- 2.1.7 Have the victim gently exercise the affected parts once they are thawed.
- 2.1.8 Seek immediate medical attention for thawing of serious frostbite.

2.2 Hypothermia

- 2.2.1 Bring the victim into a warm room or shelter as quickly as possible.
- 2.2.2 Give artificial respiration and stop any bleeding, if necessary.
- 2.2.3 If the victim cannot be moved (spinal injury, etc.), carefully place newspapers, blankets, or some other insulation between the victim and the ground.
- 2.2.4 Remove all wet clothing.
- 2.2.5 Provide an external heat source, because the body cannot generate its own heat. Wrap the victim in prewarmed blankets, place him or her in the liner of a portable hypothermia treatment unit, put the torso (not the extremities) into a tub of warm water, or use body-to-body contact to rewarm the body core. These measures will slowly reopen the peripheral circulation, minimizing the possibility of after-shock or after-drop (the flowing of cooled, stagnated blood from the limbs to the heart), which may cause ventricular fibrillation, cardiac arrest, or death.
- 2.2.6 Do not allow the victim to sleep.
- 2.2.7 Give warm, sweet drinks. Do not give alcohol or pain relievers.
- 2.2.8 Keep the victim still. Do not try to walk.
- 2.2.9 Do not rub numb skin.
- 2.2.10 Get medical attention as soon as possible.

05-505-Cold Exposure

The following Occupational Health and Safety regulations apply directly to cold and snow hazards:

Jurisdiction	Regulation
United States	
OSHA	Title 29, Code of Federal Regulations, Sections 1910.1027 and 1926.1127
Canada	
Alberta	n/a
British Columbia	OHS Regulation (1997) Sect 7.33 – 7.38
Manitoba	Workplace Health and Safety Regulation (217/2006) Sect 4.12, 4.14
New Brunswick	OHS Regulation (91-191) Sect 44
Newfoundland/Labrador	OHS Regulation (C.N.L.R. 1165/96) Sect 10
Nova Scotia	n/a
NWT/NU Territories	n/a
Ontario	O. Reg. 851 Sect 39, 129
Prince Edward Island	OHS Regulations (EC180/87) Sect 42.1
Quebec	OHS Regulation (R.R.Q., c. S-2.1, r.19.01 O.C. 885-2001) Schedule 4
Saskatchewan	OHS Regulation (R.R.S., c. O-1, r. 1) Sect 70 Cold Conditions Guidelines for Outside Workers
Yukon Territory	Occupational Health Regulations (O.I.C. 1986/164) Sect 9

5-511 Heat Stress Prevention

1.0 Purpose and Scope

- 1.1 Establishes a heat stress prevention program to help ensure that employees know and recognize the symptoms of heat stress-related illnesses and are prepared to take appropriate corrective action.
- 1.2 This procedure applies to all Resolution Consultants employees and operations.

2.0 Terms and Definitions

- 2.1 **Acclimated:** Workers who have developed physiological adaptation to hot environments characterized by increased sweating efficiency, circulation stability, and tolerance of high temperatures without stress. Acclimatization occurs after 7 to 10 consecutive days of exposure to heat and much of its benefit may be lost if exposure to hot environments is discontinued for a week.
- 2.2 **Chemical Protective Clothing (CPC):** Apparel that is constructed of relatively impermeable materials intended to act as a barrier to physical contact of the worker with potentially hazardous materials in the workplace. Such materials include: Tyvek® coveralls (all types) and polyvinyl chloride (PVC) coveralls and rain suits.
- 2.3 **Unacclimated:** Workers who have not been exposed to hot work conditions for one week or more or who have become heat-intolerant due to illness or other reasons.
- 2.4 **Heat Cramps:** A form of heat stress brought on by profuse sweating and the resultant loss of salt from the body.
- 2.5 **Heat Exhaustion:** A form of heat stress brought about by the pooling of blood in the vessels of the skin and in the extremities.
- 2.6 **Heat Rash:** A heat-induced condition characterized by a red, bumpy rash with severe itching.
- 2.7 **Heat Stress.** The combination of environmental and physical work factors that constitute the total heat load imposed on the body.
- 2.8 **Heat Stroke:** The most serious form of heat stress, which involves a profound disturbance of the body's heat-regulating mechanism.
- 2.9 **Sunburn:** Is caused by unprotected exposure to ultraviolet light that is damaging to the skin. The injury is characterized by red painful skin, blisters, and/or peeling.

3.0 References

- 3.1 5-003-SH&E Training
- 3.2 5-208-Personal Protective Equipment
- 3.3 5-314-Working Alone and Remote Travel

4.0 Procedures

4.1 Restrictions

- 4.1.1 Staff working in extreme heat or sun for extended periods of time away from a shelter or vehicle must not work alone.
- 4.1.2 Staff shall not be exposed to levels that exceed those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH Standard.
- 4.1.3 Clothing corrections shall be applied in accordance with the heat stress and strain section of the ACGIH Standard.

4.2 Roles and Responsibilities

- 4.2.1 Project Managers'/field task managers' responsibilities:

- Evaluate the need for heat stress prevention measures and incorporate as appropriate into the Health and Safety Plan.
- Implement heat stress prevention measures, as applicable, at each work site.
- Develop/coordinate a work-rest schedule, as applicable.
- Ensure heat stress hazard assessments/evaluations were completed for the planned activities.
- Assign personnel physically capable of performing the assigned tasks.
- Ensure that personnel are properly trained in the recognition of heat stress-related symptoms.

4.2.2 SH&E Managers' responsibilities:

- Provide heat stress awareness training.
- Assist project teams develop appropriate work-rest schedules.
- Conduct/support incident investigations related to potential heat stress-related illnesses.

4.2.3 Site Supervisors' responsibilities:

- Identify those tasks that may be most impacted by heat stress and communicate the hazard to the assigned employees.
- Ensure that employees have been trained on the recognition of heat stress-related illness.
- Ensure that adequate supplies of appropriate fluids are readily available to employees.
- Ensure that a proper rest area is available.
- Conduct heat stress monitoring, as applicable.
- Implement the work-rest schedule.
- Ensure that first aid measures are implemented once heat stress symptoms are identified.
- Ensure personnel are physically capable of performing the assigned tasks and are not in a physically compromised condition.
- Report all suspected heat stress-related illnesses.

4.2.4 Employees' responsibilities:

- Observe each other for the early symptoms of heat stress-related illnesses.
- Maintain an adequate intake of available fluids.
- Be familiar with heat stress hazards, predisposing factors, and preventative measures.
- Report to work in a properly vested and hydrated condition.
- Report all suspected heat stress-related illnesses.

4.3 **Controls**

4.3.1 If staff are or may be exposed, the supervisor shall:

- Conduct a heat stress assessment to determine the potential for hazardous exposure of workers, and
- Develop and implement a heat stress exposure control plan.

4.3.2 If staff are or may be exposed, the supervisor shall implement engineering controls (e.g., shelters, cooling devices, etc.) to reduce the exposure of staff to levels below those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH Standard.

4.3.3 If engineering controls are not practicable, the supervisor shall reduce the exposure of workers to levels below those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH Standard by providing administrative controls, including a work-rest cycle or personal protective equipment, if the equipment provides protection equally effective as administrative controls.

4.3.4 If staff are or may be exposed, the supervisor shall provide and maintain an adequate supply of cool, potable water close to the work area for the use of a heat exposed worker.

4.3.5 If a staff person shows signs or reports symptoms of heat stress or strain, they shall be removed from the hot environment and treated by an appropriate first aid attendant, if available, or by a physician.

- 4.3.6 Heat stress can be a significant field site hazard, especially for workers wearing CPC. The workforce will gradually work up to a full workload under potentially stressful conditions to allow for proper acclimation.
- 4.3.7 Site personnel shall be instructed in the recognition of heat stress symptoms, the first aid treatment procedures for severe heat stress, and the prevention of heat stress injuries. Workers must be encouraged to immediately report any heat stress that they may experience or observe in fellow workers. Supervisors must use such information to adjust the work-rest schedule to accommodate such problems.
- 4.3.8 Wherever possible, a designated break area should be established in an air conditioned space, or in shaded areas where air conditioning is impractical. The break area should be equipped to allow workers to loosen or remove protective clothing, and sufficient seating should be available for all personnel. During breaks, workers must be encouraged to drink plenty of water or other liquids, even if not thirsty, to replace lost fluids and to help cool off. Cool water should be available at all times in the break area, and in the work area itself unless hygiene/chemical exposure issues prevent it.

4.4 **Symptoms and Treatment**

- 4.4.1 Workers who exhibit ANY signs of significant heat stress (e.g., profuse sweating, confusion and irritability, pale, clammy skin), shall be relieved of all duties at once, made to rest in a cool location, and provided with large amounts of cool water.
- 4.4.2 Anyone exhibiting symptoms of heat stroke (red, dry skin, or unconsciousness) must be taken immediately to the nearest medical facility, taking steps to cool the person during transportation (clothing removal, wet the skin, air conditioning, etc.).
- 4.4.3 Severe heat stress (heat stroke) is a life-threatening condition that must be treated by a competent medical authority.

4.5 **Prevention**

- 4.5.1 All staff working in extreme heat or sun should understand the following guidelines for preventing and detecting heat exhaustion and heat stroke.
- If you experience heat exhaustion or heat stroke you must immediately seek shelter and water.
 - Take frequent short breaks in areas sheltered from direct sunlight; eat and drink small amounts frequently.
 - Try to schedule work for the coolest part of the day, early morning and evening.
- 4.5.2 Prevention of heat-related illnesses:
- Avoid strenuous physical activity outdoors during the hottest part of the day.
 - Wear a hat and light-colored, loose-fitting clothing to reflect the sun.
 - Avoid sudden changes of temperature. Air out a hot vehicle before getting into it.
 - If you take diuretics, ask your doctor about taking a lower dose during hot weather.
 - Drink 8 to 10 glasses of water per day. Drink even more if you are working or exercising in hot weather.
 - Avoid caffeine and alcohol as they increase dehydration.
 - If you exercise strenuously in hot weather, drink more liquid than your thirst seems to require.

4.6 **Personal Protective Equipment**

- Wear a hat and light-colored, loose-fitting clothing to reflect the sun.
- Apply sunscreen to exposed skin (SPF 30 or greater, follow directions on label).
- Wear sunglasses with UV protection.
- Pack extra water to avoid dehydration (try freezing water in bottles overnight to help keep the water cooler for longer during the day).

4.7 **Work-Rest Schedule Practices**

- Intake of fluid will be increased beyond that which satisfies thirst, and it is important to avoid "fluid debt," which will not be made up as long as the individual is sweating.
- Two 8-ounce glasses of water should be taken prior to beginning work, then up to 32 oz. per hour during the work shift; fluid replacement at frequent intervals is most effective.

- The best fluid to drink is water; liquids like coffee or soda do not provide efficient hydration and may increase loss of water.
- If commercial electrolyte drinks (e.g., Gatorade) are used, the drink should be diluted with water, or 8 ounces of water should be taken with each 8 ounces of electrolyte beverage.
- Additional salt is usually not needed and salt tablets should not be taken.
- Replacement fluids should be cool, but not cold.
- Breaks will be taken in a cool, shaded location, and any impermeable clothing should be opened or removed.
- Dry clothing or towels will be available to minimize chills when taking breaks.
- Manual labor will not be performed during breaks, other than paperwork or similar light tasks.
- Other controls that may be used include:
 - Scheduling work at night or during the cooler parts of the day (6 am–10 am, 3 pm–7 pm).
 - Erecting a cover or partition to shade the work area.
 - Wearing cooling devices such as vortex tubes or cooling vests beneath protective garments. If cooling devices are worn, only physiological monitoring will be used to determine work activity.

4.8 Evaluating the Work-Rest Schedule's Effectiveness

4.8.1 Once a work-rest schedule is established, the work supervisor must continually evaluate its effectiveness through observation of workers for signs/symptoms of heart stress. Measurement of each worker's vitals (e.g., pulse, blood pressure, and temperature) can provide additional information in determining if the schedule is adequate, and is accomplished as follows:

4.8.2 At the start of the workday each worker's baseline pulse rate (in beats per minute – bpm) is determined by taking a pulse count for 15 seconds and multiplying the result by four or an automated pulse count device may be utilized. Worker pulse rates can then be measured at the beginning and end of each break period to determine if the rest period allows adequate cooling by applying the following criteria:

- Each worker's maximum heart rate at the start of any break should be less than [180 minus worker's age] bpm. If this value is exceeded for any worker, the duration of the following work period will be decreased by at least 10 minutes.
- At the end of each work period all workers' heart rates must have returned to within +10% of the baseline pulse rate. If any worker's pulse rate exceeds this value the break period will be extended for at least 5 minutes, at the end of which pulse rates will be remeasured and the end-of-break criteria again applied.

4.8.3 Use a clinical thermometer or similar device to measure the oral/ear temperature at the beginning (before drinking liquids) and end of each break period and apply the following criteria:

- If the oral temperature exceeds 99.6°F, shorten the next work cycle by one-third without changing the rest period.
- If the oral temperature still exceeds 99.6°F (36.6°C) at the beginning of the next rest period, shorten the following work cycle by one-third.

4.8.4 Use of an automated or similar blood pressure device will be used to assess each employee's blood pressure at the beginning and end of each break period to determine if the rest period allows adequate cooling by applying the following criteria:

- If the blood pressure of an employee is outside of 90/60 to 150/90, then the employee will not be allowed to begin or resume work; extend the break period by at least five minutes, at the end of which blood pressure rates will be remeasured and the end-of-break criteria again applied.

4.8.5 All physiological monitoring of heat stress will be documented using *5-511-Heat/Cold Stress Monitoring Log*.

4.9 Training

4.9.1 Project staff and their supervisors that may be exposed to the hazard will be oriented to the hazard and the controls prior to work commencing.

4.9.2 Those personnel potentially exposed to heat stress will receive training including, but not limited to

- Sources of heat stress, influence of protective clothing, and importance of acclimatization.
- How the body handles heat.
- Recognition of heat-related illness symptoms.
- Preventative/corrective measures.
 - Employees will be informed of the harmful effects of excessive alcohol consumption in the prevention of heat stress.
 - All employees will be informed of the importance of adequate rest and proper diet in the prevention of heat stress.
- First aid procedures for heat stress-related illnesses.

5.0 Records

None.

6.0 Attachments

6.1 5-511-FM Heat/Cold Stress Monitoring Log

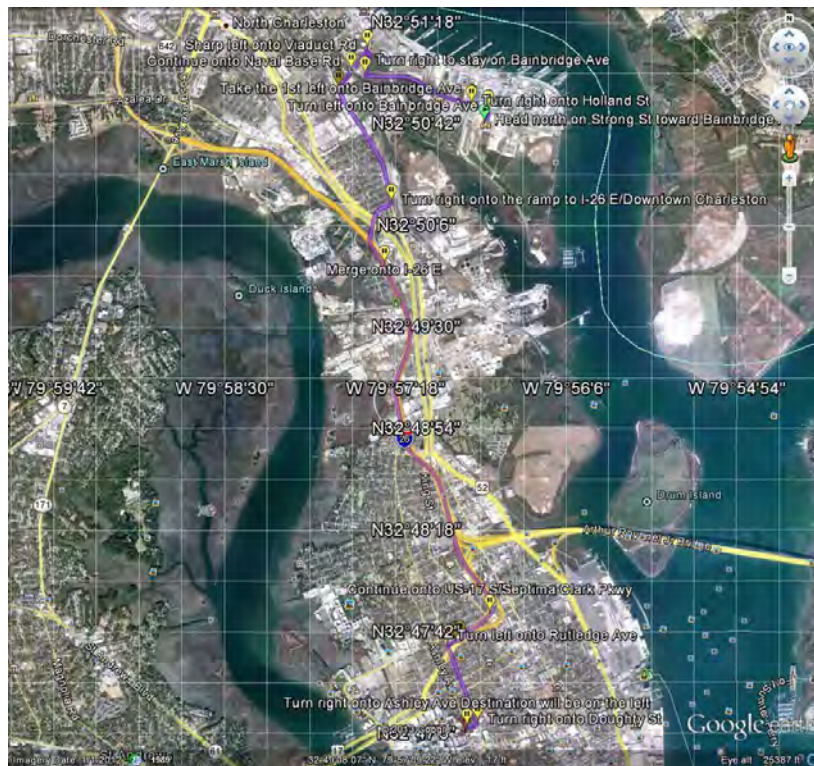
5-511 Form 1 Heat Stress Monitoring Log

The purpose of this form is to track entry into hot zones wearing chemically protective clothing and monitor employees for heat stress-related illness. It is the responsibility of the foreman or supervisor-in-charge to ensure that each person entering the hot zone completes the required information. Vital signs must be taken by a competent person.

Project Name:			Foreman/Supervisor:						Work/Rest Schedule1:		IN (min)		OUT (min)			
Date:	Water Provided²		Acclimated³		Initial Vitals³	Vital Signs and Time In/Out⁴										
Employee Name	Yes	No	Yes	No	Vitals	In	Out	Vitals	In	Out	Vitals	In	Out	Vitals	In	Out
					P			P			P			P		
					BP			BP			BP			BP		
					Temp			Temp			Temp			Temp		
					P			P			P			P		
					BP			BP			BP			BP		
					Temp			Temp			Temp			Temp		
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					Temp			Temp			Temp			Temp		

1. Please refer to 5-511 Heat Stress. Section 6.3 provides specific details on how to develop a work-rest schedule.
2. Each employee should be provided a sufficient amount of water or sports drink before entering the hot zone. Drinks such as coffee and cola should be discouraged.
3. A worker is "acclimated" if he/she has worked in a hot environment for at least 7 to 10 consecutive days. If a worker is acclimated, check "Yes." If a worker is not acclimated, check "No" and reduce the "Min In" by 50 percent for that employee until the 7- to 10-day period is reached.
4. "Vitals" refers to employee vital signs (e.g., pulse [P], blood pressure [BP], body temperature [Temp], etc.). Initial vitals must be taken and recorded before the start of work operations in the hot zone. Each time the employee exits the hot zone, vitals must be taken and evaluated for heat stress criteria. Section 6.4 of 5-511 Heat Stress provides specific instructions for taking and evaluating employee vital signs.
5. Body temperature vital signs will be recorded in °F.

Attachment 5
Route Map to Emergency Medical Facility



Directions from: Charleston Naval Complex
North Charleston, SC

1. Head north on Strong St toward Bainbridge Ave
 2. Turn left onto Bainbridge Ave
 3. Turn right onto Holland St
 4. Take the 1st left onto Bainbridge Ave
 5. Turn right to stay on Bainbridge Ave
 6. Sharp left onto Viaduct Rd
 7. Continue onto Naval Base Rd
 8. Turn left onto Spruill Ave/State Rd S-10-32
 9. Turn right onto the ramp to I-26 E/Downtown Charleston
 10. Merge onto I-26 E
 11. Continue onto US-17 S/Septima Clark Pkwy
 12. Slight right toward Sheppard St
 13. Continue straight onto Sheppard St
 14. Turn left onto Rutledge Ave
 15. Turn right onto Doughty St
 16. Turn right onto Ashley Ave
- Destination will be on the left

Medical University of South Carolina
169 Ashley Ave
Charleston, SC 29403

Appendix I
Envirosmart Health and Safety Plan



**SITE-SPECIFIC
HEALTH AND SAFETY PLAN**

**RESOLUTION CONSULTANTS
CHARLESTON NAVAL COMPLEX**

Prepared for:

Resolution Consultants

CONTRACT NO.:

February 2013



SITE HEALTH AND SAFETY PLAN

LAB WASTE INSPECTION SERVICES CHARLESTON NAVAL COMPLEX

I hereby certify that the enclosed Site-Specific Health and Safety Plan, shown and marked in this submittal, has been prepared in accordance with OSHA 29 CFR 1910 and is proposed to be incorporated with Contract No.: XXX. This Site Health and Safety Plan is submitted for Resolution Consultants approval.

Plan Preparer:

	2/5/13	843-609-6681
Bryon Snow Health and Safety Manager	Date	Phone Number

Plan Approval:

	2/5/13	843-670-3975
Michael Costa Program Manager	Date	Phone Number

Accepted as a submittal:

CLIENT	Date	Phone Number
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1.0 INTRODUCTION AND SITE ENTRY REQUIREMENTS

This document describes the health and safety guidelines developed to protect on-site personnel, visitors, and the public from physical harm and exposure for the Lab Waste Inspection project site. The procedures and guidelines contained herein were based upon the best available information at the time of the plan's preparation regarding project site conditions and also considers all elements in the EnviroSmart Corporate Health & Safety Plan dated October 2011. Specific requirements will be revised when new information is received or conditions change. A written amendment will document all changes made to the plan and included in Attachment A. Where appropriate, specific OSHA standards or other guidance will be cited and applied.

All work practices and procedures implemented on site must be designated to minimize worker contact with hazardous materials and to reduce the possibility of physical injury. All work will be performed in accordance with applicable Federal 29 CFR 1910 and 1926 health and safety regulations, including the Federal 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response regulation.

1.1 Policy Statement:

It is the goal of EnviroSmart to eliminate all preventable accidents and to comply with all laws, regulations and recognized safe practices pertaining to employee safety and health. It is the intent of this written program to ensure that EnviroSmart employees meet the goal stated above and to clearly communicate the company's guidelines for the enforcement of its safety rules and regulations, and the use of personal protective equipment; and to emphasize its importance to the employee's welfare as well as that of the company.

POLICY GUIDELINES:

1. All EnviroSmart Project Managers and Superintendents are to be familiar with the requirements of OSHA, EM-385-1-1 and this Site Health Safety Plan.
2. All EnviroSmart Project Managers and Superintendents maintain valid First Aid and CPR certifications. EnviroSmart will assist in this by scheduling regular training sessions either in-house or with the American Red Cross and paying the fees for such training.
3. EnviroSmart will consistently enforce the use of personal protective equipment, including, but not limited to:
 - a) Hard hats must be worn (correctly) at all times while in the construction area.
 - b) Appropriate eye protection must be worn at all times while in the construction area. The PPE assessment for eye protection shall be referred to for appropriate



eye protection.

c) Hearing protection shall be worn when noise levels are equal to or exceed 85 decibels.

d) Leather safety shoes, with hard soles, shall be worn by all EnviroSmart employees and subcontractors while on the job site. Further, boots shall be fully laced to provide proper support to the ankle.

e) Proper clothing shall be worn. No loose clothing, sleeveless shirts, shorts or sweat pants are allowed.

4. EnviroSmart will be ultimately responsible in ensuring employees are familiar with the hazards inherent in their work processes. However, employees have a responsibility to familiarize themselves with their work processes and identify any uncontrolled hazards created by this work. If unsure of the proper safety procedures to be taken, employees shall contact the Project Superintendent for further guidance.

5. Employees shall report any unsafe conditions to their supervisor immediately.

6. All accidents and/or injuries are to be reported to the Project Superintendent immediately. Delays in reporting may result in denial of coverage by EnviroSmart's insurance carrier.

7. The SSHO will report to the appropriate persons within the time frame specified in the Contract Documents.

1.2 Daily Safety Meetings

Daily safety meetings will be held at the start of each shift to ensure that all personnel understand site conditions and operating procedures, to ensure that personal protective equipment is being used correctly and to address worker health and safety concerns.

1.3 Site Specific Training

The Project Manager shall be responsible for informing all individuals assigned to this project of the contents of this plan and ensuring that each person signs the Site Specific Training Record in Attachment B. By signing the Site Specific Training Record, individuals are recognizing the potential hazards present on-site and the policies and procedures required to minimize exposure or adverse effects of these hazards.

2.0 **ROLES AND RESPONSIBILITIES**

This Section describes lines of authority, responsibility, and communication for health and safety functions at this site. The purpose of this section is to identify the personnel involved in the development and implementation of the site health and safety plan and



to describe their roles and responsibilities. Additionally, subcontractors shall be required to comply with the safety requirements of their specific portion of the project, as well as meet the minimum requirements of EnviroSmart's Health & Safety Program.

This section also identifies other contractors and subcontractors involved in work operations and establish the lines of communication among them for safety and health matters.

The organizational structure of this site's safety and health program is consistent with OSHA requirements in 29 CFR 1910.120(b)(2) and provides the following site-specific information:

- * the general supervisor who has the responsibility and authority to direct all site operations
- * the site safety and health officer who has the responsibility and authority to develop and implement this HASP and verify compliance
- * other personnel needed for lab waste inspections and their general functions and responsibilities
- * the lines of authority, responsibility, and communication for safety and health functions

This Section is reviewed and updated as necessary to reflect the current organizational structure at this site. All personnel and visitors on this site must comply with the requirements of this HASP. The specific responsibilities and authority of management, safety and health, and other personnel on this site are detailed in the following paragraphs. The lines of authority are provided below in Section.



2.1 Key Personnel

Project/Task Order: Charleston Naval Complex Bldg 13 Lab Waste Inspection	
Key Personnel	
Names and Titles	Contact Information
Resolution Consultants Contracting Officer: TBD	Phone: TBD Email: TBD
Resolution Consultants Technical Officer: TBD	Phone: TBD Email: TBD
Site Supervisor: Abby Miller	Phone: 843-200-3865 Email: Abby.Miller@envirosmart.us
Site Safety & Health Officer: Bryon Snow	Phone: 843-609-6681 Email: Bryon@envirosmart.us
Program/Contract Manager: Michael Costa	Phone: 843-722-0062 Email: Michael@envirosmart.us
Subcontractors	
Company	Scope of Services
NA	NA

2.2 Site Supervisor: Abby Miller

As the Site Supervisor for this project, Mrs. Abby Miller has the responsibility and authority to direct all work operations. The specific duties of the Site Supervisor are:

Preparing and coordinating the site activities; providing site supervisor(s) with work assignments and overseeing their performance; coordinating safety and health efforts with the SSHO (see below); ensuring effective emergency response; serving as primary site liaison with public agencies and officials and site contractors. The qualified alternate Site Supervisor (PM) for this site is Bryon Snow.

2.3 Site Safety and Health Officer (SHSO): Bryon Snow

Mr. Bryon Snow will function as the Site Safety and Health Officer (SSHO) for this site with full responsibility and authority to develop and implement this HASP and to verify compliance. The SSHO is on site or readily accessible to the site during all work operations and has the authority to halt site work if unsafe conditions are detected.

The EnviroSmart SSHO's responsibilities will include, but are not limited to:

1. Displaying leadership in the safety activities of the project and ensuring compliance by all personnel with the accident prevention procedures and policies in this program;
2. Coordinating with the employees and sub-contractors on matters relating to work site

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activities, existing or planned, to ensure adequate consideration is given to the prevention of accidents and injuries;

3. Familiarity and compliance with federal, state, and local safety regulations;
4. Conducting weekly safety meetings with employees at the job site;
5. Enforcing all safety standards with EnviroSmart employees and subcontractors, and any other individuals entering the job site;
6. Performing the initial accident investigation after an accident, and completing the proper reports;
7. Making daily inspections of the work areas for unsafe practices and conditions and ensuring corrective actions are taken to abate hazards;
8. Encouraging employees to report unsafe conditions and unsafe work practices;
9. Providing initial indoctrination for new EnviroSmart employees and existing EnviroSmart employees first entering the work site;
10. Conducting weekly and monthly safety meetings;
11. Conducting preparatory meetings and AHA's with employees under their supervision to discuss hazards of the job tasks and means and methods of controlling these hazards;
15. Training employees under their supervision on the basic hazards of their jobs and the means and methods of controlling these hazards;
16. Serving as the competent person on specific job tasks under their control such as excavation, etc.

2.4 Environmental Technician: Ryan Galloway

Responsibilities include coordination between Site Supervisor and field operators for the proper removal and response activities. This may also include equipment maintenance and calibration; all phases of sample collection, testing and measurement; primary record keeping and data entry/retrieval; and participation in report writing. Work may occasionally involve limited lead worker activities in planning or coordinating specific field or office projects. Mr. Galloway will report directly to the Site Supervisor, Abby Miller.

2.5 Heavy Equipment Operator: Not applicable for this project.



2.6 Subcontractors:

EnviroSmart may subcontract additional resources and support as needed to facilitate the timely and proper implementation of the Lab waste inspection activities. All subcontractors will adhere directly to the minimum requirements of this Site-Specific Health & Safety Plan. In addition, all subcontractors will submit personnel for Base Access approval prior to mobilization to the facility.

2.7 Contracting Officer

The Resolution Consultants Contracting Officer has overall project authority and directs the EnviroSmart Site Supervisor regarding the tasks required to meet project objectives. The Contracting Officer has the authority to stop work and initiate corrective actions should there be a reason to do so.

2.8 Lines of Authority

The lines of authority for the management levels of this project consist of the following: The Site Supervisor, Abby Miller reports directly to the Office Program Manager, Michael Costa and President, Michelle Lynch. All on-site EnviroSmart employees and subcontractors report directly to the EnviroSmart Site Supervisor, Abby Miller.

3.0 SCOPE OF WORK

3.1 Scope of Work

EnviroSmart will perform Lab waste inspection services under a direct contract with Resolution Consultants. EnviroSmart is responsible for furnishing all personnel, equipment, supplies, and materials necessary to visually inspect Building 13 for contaminated laboratory equipment and laboratory waste. Contaminated laboratory equipment and laboratory waste will be inventoried at the time of the inspection. EnviroSmart will then prepare a summary report to document materials identified and present an approach for decontaminating laboratory equipment and characterizing, removing, and disposing laboratory waste in accordance with applicable state and federal laws and regulations and health and safety requirements.

4.0 HAZARD ASSESSMENT

This section is to be addressed in the daily toolbox safety meeting as each task is to be initiated. Each Task-Specific Safety Assessment is designed to develop awareness to chemical and physical hazards specific to each task. Sources, Hazards and Control Measures will be addressed for each job task.



Specific work tasks with unique hazards and/or PPE requirements must be evaluated or reevaluated prior to beginning work. This task review will be led by the Site Supervisor and SSHO, and will include knowledgeable individuals such as the technician (s) and the operators. PPE requirements, based on this assessment, are included in Section 6 of the HASP or in the AHA for the specific task. All workers must be trained in the requirements of the HASP and the applicable AHAs prior to beginning work. The required PPE may be changed by the SSHO, based on any results of additional air monitoring (if necessary), or on task-specific needs. Downgrades will require the approval of the Site Supervisor unless otherwise permissible by the HASP.

The following section outlines the AHAs developed for task phases necessary to complete the SOW activities listed in Section 3.1. The AHAs should be revised for site-specific activities and reviewed with the work crew before commencing any activity. The AHAs developed for each phase of this project are included in Attachment D.

4.1 Chemical Hazards

Site Contaminants/Chemicals of Concern					
Chemical	Media	PEL	TLV	Route of Entry	Symptoms Acute/Chronic
Unknown Chemical Products	Solid/liquids	None NIOSH REL TWA	None	Inhalation Ingestion Contact	Irritation of skin, respiratory system; skin burns

The above listing should not be taken as a complete assessment of the hazards posed by materials at the Charleston Naval Complex's site. The known and unknown mixed chemical hazards at this site prevent a clear determination of the specific effects of discrete compounds. Therefore, personnel must be alert for symptoms of possible exposure such as unusual smells, stinging, burning eyes; nose and throat, skin irritation, as well as feeling extremely well, depressed, sleepy or tired. Symptoms must be immediately reported to the Site Supervisor.

See Attachment E for Chemical Hazard Information and MSDS'.

4.2 Task Specific Hazards and Controls

This section is to be addressed in the daily tool box safety meeting as each task is to be attempted. Each Task-Specific Safety Assessment is designed to develop awareness to chemical and physical hazards specific to each task. It would be impractical to repeat in complete detail each control measure and SOP for each job task. Sources, Hazards and Control Measures will be addressed for each job task.



Task Specific Safety Assessment		
Job Task: Site Set Up		
Personal Protective Equipment: Level D		
Hazard	Sources	Control Measures
Struck by/caught between	Vehicle & Equipment Operation/Traffic	Only qualified drivers permitted to operate vehicles Wear ANSI Type 2 high-visibility safety vest Wear seat belts while in operation Back up alarms Controlled Work Area
Ergonomics	Lifting and Bending	Proper lifting techniques / Buddy system Use mechanical means when possible
Dermatitis	Unknown Chemicals	Donne proper PPE to limit exposure
Heat Stress	Seasonal weather	Not applicable for this project.
Noise	Equipment/vehicles/hand tools	Hearing protection for levels > 85 dBs
Punctures	Sharp Objects	Beware of sharp objects / Wear leather gloves
Slips/Trips/Falls	Uneven Terrain Debris	Identify/mark hazards Remove debris from walking / working surfaces

4.3 Pre-Planning Physical Hazards

POTENTIAL PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS		
HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
Electrical	<ol style="list-style-type: none"> 1. Locate and mark existing energized lines. 2. De-energize lines if necessary to perform work safely. 3. All electrical circuits will be grounded. 4. All 120 volt single phase which are not a part of the permanent wiring will have a ground-fault interrupter in place. 5. Temporary wiring will be guarded, buried or isolated by elevation to prevent accidental contact by personnel or equipment. 6. Evaluate potential for high moisture/standing water areas and define special electrical wiring needs-typically requirement for low voltage lighting systems. 	<ol style="list-style-type: none"> 1. Utilize Qualified Electrical Contractor for any new or temporary electrical construction. 2. Ensure electrical equipment/material meet all local, state and federal code and specifications 3. Use GFCI for all power tool usage.
Ergonomic	<ol style="list-style-type: none"> 1. All operations evaluated for ergonomic impact. 2. Procedures written to define limits of lifting, pulling, etc. 3. Procedures to define how personnel will utilize proper ergonomic concepts and utilize mechanical material handling equipment. 4. Necessary mechanical material handling equipment specified and ordered for project. 	<ol style="list-style-type: none"> 1. Proper body mechanics techniques stressed and enforced on a daily basis. 2. Mechanical handling equipment maintained and utilized. 3. Proper body mechanics stressed in scheduled safety meetings. 4. Injuries reported and medically treated if in doubt about severity. 5. Operations changed as necessary based on injury experience or potential.
Fires &	<ol style="list-style-type: none"> 1. Evaluate all operations for fire and explosion potential. 	<ol style="list-style-type: none"> 1. Inspect fire suppression equipment on a



POTENTIAL PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS		
HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
Explosions	<ol style="list-style-type: none"> 2. Define specific procedures for unique operations presenting unusual hazard such as flammable tank. 3. Ensure that properly trained personnel and specialized equipment is available. 4. Define requirements for handling and storage of flammable liquids on site, need for hot work permits and procedures to follow in the event of fire or explosion. 5. Define the type and quantity of fire suppression equipment needed on site. 6. Coordinate with local fire fighting agencies to discuss unique fire hazards, hazardous materials, etc. 7. Ensure site operations comply with 29CFR 1910.157G. 	<ol style="list-style-type: none"> 1. regular basis. 2. Store flammables away from oxidizers and corrosives. 3. Utilize Hot Work Permit for all hot work on-site. 4. Follow any relevant procedures regarding work around flammables. 5. Review and practice contingency plans. 6. Discuss on regular basis at scheduled safety meetings.
Flammable Vapor and Gases	<ol style="list-style-type: none"> 1. Evaluate site to determine sources of likely flammable gas or vapor generation. 2. Develop specific procedures to be followed in the event of exposure to flammables. 3. Specify specialized equipment needs for making flammable atmospheres inert, ventilating spaces and monitoring flammable vapor concentrations. 4. Define requirements for intrinsically safe equipment. 5. Develop contingency plan to follow in the event of fire or explosion. 	<ol style="list-style-type: none"> 1. Calibrated monitoring equipment available and utilized by trained personnel whenever working where flammable gas or vapor is present. 2. Monitoring performed at regular frequency and in all areas where vapor could generate or pool. 3. Equipment and operations shut down when threshold levels are exceeded. 4. Contingency plans reviewed regularly by all involved personnel. 5. Work areas are carefully inspected to look for possible ignition sources. Sources are removed. 6. Operations shut down if specific task procedures can't be followed to the letter.
Heavy Equipment Operation	Not applicable to this project	
Illumination	<ol style="list-style-type: none"> 1. Evaluate all operations and work areas to determine lighting requirements. 2. Specify specialized lighting requirements including explosion proof, intrinsically safe, lighting needs. 3. Determine if nighttime outdoor operations are necessary. 4. Evaluate tasks to be performed and number of light plants necessary to allow operations. 5. Ascertain if outdoor lighting from nighttime operations will have an impact on surrounding communities. 	<ol style="list-style-type: none"> 1. Inspect specialized equipment and discard or replace as needed. 2. Add additional lighting to areas with lighting deficiencies. 3. Inspect drop cords and portable lights on regular basis. Replace or repair as necessary.
Noise	<ol style="list-style-type: none"> 1. Local community noise standards examined. 2. Expected loud operations evaluated to determine compliance with community standards. 3. Loud operations scheduled for approved time periods. 4. Noise level standards established for equipment brought onto site. 5. Hearing protection requirements defined for personnel expected to have excessive exposures. 	<ol style="list-style-type: none"> 1. Personnel receive annual audiogram. 2. Personnel required to wear hearing protection. 3. Routine noise level monitoring and dosimetry performed. 4. Defective equipment repaired as needed. 5. Ongoing hearing conservation education promoted at scheduled safety meetings. 6. Medical evaluation following noise (impact) exposure if symptoms present themselves.
Personal Injuries	<ol style="list-style-type: none"> 1. Site operations will be evaluated for exposures with serious injury potential such as falling objects, pinch points, flying objects, falls from elevated surfaces, etc. 2. A written Fall Prevention Program will be developed if workers will be required to work at heights greater than 6 feet from unguarded work locations. 3. PPE requirements will be based on potential for injury. 	<ol style="list-style-type: none"> 1. Personnel will wear required PPE. 2. Specialized equipment such as rope grabs, winches, etc. will be inspected prior to each use. 3. Defective equipment will be immediately replaced. 4. All injury and near miss incidents will be reported to the SSHO. 5. First aid/CPR trained person on site at all times. 6. First aid on site. 7. Transport for medical care if necessary.
Small Equipment Usage	<ol style="list-style-type: none"> 1. Site operations will be evaluated to determine need for specialized intrinsically safe, explosion-proof and UL approved equipment and instruments. 	<ol style="list-style-type: none"> 1. Inspect each tool prior to each use. 2. Ensure all guards are in use and properly positioned.



POTENTIAL PHYSICAL/ENVIRONMENTAL HAZARD ANALYSIS		
HAZARD	PRE PLANNING TO CONTROL HAZARD	ACTIVE CONTROL MEASURES
	<ol style="list-style-type: none"> Implement requirement for G.F.I., double insulated tool usage, or assured grounding program in all outdoor operations, will be utilized. Specify equipment needs to ensure that equipment used only for the purpose for which it is designed and to prevent abuse or misuse of the equipment. Specify requirements for the inspections and maintenance of specialized equipment. Specify that all equipment utilized on the project meets all OSHA requirements. 	<ol style="list-style-type: none"> Ensure item being worked on is properly braced if necessary. Get help when appropriate to hold or brace item being worked on. Wear leather or other appropriate gloves in addition to level C PPE.
Weather Conditions	<ol style="list-style-type: none"> Evaluate prevailing weather conditions for the site. Contingency plans developed for likely severe weather conditions such as tornado, and extreme thunderstorm. Provide for daily weather forecast service in extreme weather areas. Plan to weatherize safety systems, such as showers and eye washes that would be impacted by extreme cold weather. Order necessary specialized cold weather clothing. Grounding and bonding requirements defined for thunderstorm areas. Sheltered air conditioned break areas provided for extreme hot and cold weather zones. 	<ol style="list-style-type: none"> Employees trained in contingency plan for severe weather conditions. Emergency water sources inspected regularly in cold areas. Weather service contacted regularly during storm conditions. Supervisory personnel cease operations during extreme storm conditions (i.e., thunderstorms). Personnel evacuate to safe assembly area.
Heat Stress	<ol style="list-style-type: none"> Anticipate possible high temperatures (summer months). Be aware of heat stress symptoms, quit sweating, pale, clammy skin, dizziness 	<ol style="list-style-type: none"> Cool break area. Drink water. Buddy system/ awareness First aid on site. Medical care if symptoms persist.

4.4 Accident Investigation and Reporting

a. Exposure Data: The SSHO, Bryon Snow, shall complete exposure data on the daily report.

b. Accident Investigations, Reports and Logs: All accidents will be documented in accordance with OSHA and Worker's Compensation law requirements. (OSHA 300 log, Employer's First Report of Accident, etc.). In addition, a thorough investigation of each incident will be performed. A company accident report will include the description of the accident, the recommended action to prevent a recurrence, and the corrective action taken. If an employee is sent to a doctor for treatment, a release will be obtained from the doctor on the date of treatment stating either (1) employee is not fit for work; (2) employee is fit for light duty; or (3) the employee is fit for work. A copy will be attached to the accident report.

c. Accident Notification: Bryon Snow will notify Site Supervisor, Abby Miller, by phone immediately in the event of any major accident occurs.



5.0 Training Requirements

This section describes EnviroSmart's project training requirements and site visitor policy specific to the Lab waste inspection contract. Training of all personnel shall be in accordance with OSHA 29 CFR 1910.120.

5.1 Project Training Requirements

The training listed in Table 5-1 will be provided to project participants as noted. All required training will be documented and this documentation maintained onsite.

Project Training Requirements:		
Topic	Description	Personnel
General Training		
Site Safety and Health Plan	Review site-specific hazards and control requirements, before commencement of field work. Includes training in proper use and care of PPE.	All project personnel
Activity Hazard Analysis	Activity-specific hazards, controls and training requirements for a specific phase or activity, prior to commencement of activity	Workers, supervisors and oversight personnel engaged in the activity
Daily Safety Briefing	In addition to plan-of-the-day and daily hazard reminders, often used to cover a specific topic; provided refresher training on various issues; or changes in hazards, controls or procedures.	All field workers, supervisors and field oversight personnel
Emergency Action Plan	Roles, responsibilities, recognition of emergency conditions, reporting and notification, evacuation and other procedures.	All project personnel, with detailed information on procedures for workers with special responsibilities
OSHA 40-Hour Hazardous Waste Operation (HAZWOPER)	General hazards and controls for hazardous waste activities at remediation sites, prior to performing work.	All field workers, supervisors and field oversight personnel
Hazard Communication	Requirements for MSDS, labels; hazards of site materials and controls; location of and access to inventories and MSDS.	All project personnel potentially exposed to hazardous materials.
Fire Extinguisher	General education on selection, distribution, and proper use of fire extinguishers.	All project personnel
Special Training		
First aid/ Cardiopulmonary Resuscitation (CPR)	Red Cross, National Safety Council or other authorized course, with current refresher	At least 2 project personnel – Site Supervisor and SSHO
OSHA 30-Hour Construction Industry	Managing construction work activities per specific OSHA standards and requirements.	Site Supervisor and SSHO
Other Heavy Equipment operations	Not applicable to this project	Equipment Operators
Power tools (e.g. chain saws, chippers, powder-actuated tools, compressed air systems)	Not applicable to this project	Tool users



5.2 Visitor Indoctrination Policy

All site visitors will be required to review the daily tailgate safety issues and sign the visitor log. At a minimum, all visitors must be informed of the anticipated hazards and PPE requirements, designated work zones, escort procedures, and emergency procedures. No use of cell phones, hand held radios or cameras may be used within the facility grounds without prior approval.

6.0 PERSONAL PROTECTIVE EQUIPMENT

The following is a brief description of the personal protective equipment, which may be required during various phases of the project. The U.S. EPA terminology for protective equipment will be used; Levels A, B, C and D.

Respiratory protective equipment shall be NIOSH-approved and use shall conform to OSHA 29 CFR Part 1910.134 Requirements. Each employer shall maintain a written respirator program detailing selection, use, cleaning, maintenance and storage of respiratory protective equipment. The written Respirator Program will be maintained at the local and regional offices.

6.1 Level A Protection Shall Be Used When: (NOT ANTICIPATED)

- The extremely hazardous substance requires the highest level of protection for skin, eyes and the respiratory system;
- Substances with a high degree of hazard to the skin are known or suspected;
- Chemical concentrations are known to be above IDLH levels; or,
- Biological hazards requiring Level A are known or suspected.

6.2 Level B Protection Shall Be Used When: (NOT ANTICIPATED)

- The substance(s) has been identified and requires a high level of respiratory protection but less skin protection;
- Concentrations of chemicals in the air are IDLH or above the maximum use limit of an APR with full-face mask;
- Oxygen deficient or potentially oxygen deficient atmospheres (<19.5%) are possible; and/or, Confined space entry may require Level B.
- Incomplete identification of gases and vapors, but not suspected to be harmful to skin or skin absorbable

Level B Protective Equipment at a Minimum Shall Consist of:

Supplied Air Respirator	Fullface
Cartridges (type)	N/A
Chemical Resistant/Protective Coveralls	Saranex (Acid Suit for Acids) or PolyTyvek,
Gloves	Nitrile inner/outer
Safety shoes/Boots (type)	Chemical Resistant Steel Toed



Hard Hat
Other (List ____) _____

NIOSH approved
N/A

Modifications:

Use leather gloves when handling sharp objects.

6.3 Level C Protection Shall Be Used When: (ANTICIPATED DUE TO THE PRESENCE OF LEAD, ASBESTOS AND PIGEON FECES)

- The same level of skin protection as Level B, but a lower level of respiratory protection is required;
- The types of air contaminants have been identified, concentrations measured, and an air-purifying respirator is available that can remove contaminants; or,
- The substance has adequate warning properties and all criteria for the use of APR respirators has been met

Level C Protective Equipment at a Minimum Shall Consist of:

Air Purifying Respirator
Cartridges (type)
Chemical Resistant/Protective
Coveralls
Gloves
Safety shoes/Boots (type)
Hard Hat
Respiratory Inserts
Other (List ____) _____

Fullface
P100/OV Combination
Saranex (Acid Suit for Acids) or PolyTyvek
Nitrile inner/outer
Chemical Resistant Steel Toed
NIOSH approved
As required
N/A

Modifications:

Use leather gloves when handling sharp objects.

6.4 Level D Protection Shall Be Used When:

- The atmosphere is demonstrated to be below OSHA permissible exposure limits
- Work functions preclude splashes, immersion or the potential for unexpected inhalation of, or contact with, hazardous concentrations of harmful chemicals.

Level D Protection Equipment at a Minimum Shall Consist of:

Cotton or cotton blend coverall
Rain Suit
Safety Shoes/Boots (type)
Boot Covers (booties)
Work Gloves
Hard Hat
Safety Glasses

As necessary
As necessary
Steel Toed
During muddy conditions as necessary
Cotton work gloves
NIOSH approved
NIOSH approved



Modifications: Use leather gloves when handling sharp objects.

Specific operating procedures for PPE and Respiratory Protection are in Attachment D.

6.6 Decisions to Upgrade/Downgrade PPE

All decisions to downgrade from Level B to C or D must be accompanied by air monitoring results. The Regional Safety Managers must be advised of on-site decisions to downgrade. All decisions must be documented with an Addendum to the Plan.

The following conditions will necessitate reevaluation of PPE use.

- commencement of a new work not previously identified
- change of job tasks during a work phase
- change of season/weather
- contaminants other than those identified in Safety Plan
- change in ambient levels of contaminants
- change in work which affects degree of chemical contact

6.7 Project Personal Equipment Requirements

Project Personal Protective Equipment Requirements:							
Activity	Respiratory Protection	Body Protection	Head Protection	Hand Protection	Eye/Face Protection	Foot Protection	Hearing Protection
Site Mobilization/ Demobilization (Level D)	None	Standard work clothes	ANSI-approved hard hat	Leather and nitrile work gloves	ANSI-approved safety glasses	ANSI-approved safety boots	Plugs or muffs when using power tools
Oil Containment and Control (Level D)	None	Standard work clothes	ANSI-approved hard hat	Leather and nitrile work gloves	ANSI-approved safety glasses	ANSI-approved safety boots	Plugs or muffs when using power tools

7.0 **Medical Monitoring Requirements**

7.1 Pre-Employment Medical Examination

- a. Pre-employment medical examinations are required for persons working at hazardous waste sites.
- b. All examinations must be completed and documented prior to assignment to this site.
- c. All examinations will be conducted following parameters established by WorkCare™.



7.2 Site Specific Medical Examination

- a. N/A

7.3 Annual Medical Examination

The medical examination must have been within a 6-month period prior to on-site activity and repeated annually.

7.4 Suspected Exposure Medical Examination

- a. Following any suspected uncontrolled exposure to site contaminants, personnel should be scheduled for a special medical examination.
- b. The medical examination will be specific for the contaminants and the associated target organs or physiological system.
- c. Questions regarding the type of medical examination can be directed to EnviroSmart's Corporate Health and Safety Manager.

7.5 Contractor Medical Examination Requirements

All subcontractors entering the contamination reduction or exclusion zone, if applicable, will have adequate medical surveillance satisfying 29 CFR 1910.120.10 (f).

8.0 HEALTH AND HAZARD MONITORING

According to 29 CFR 1910.120 (h) Air Monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection needed on-site.

8.1 Routine Air Monitoring Requirements (IF APPLICABLE)

- Upon initial entry to rule out IDLH conditions
- When the possibility of an IDLH condition or flammable atmosphere has developed
- When work begins on a different portion of the site
- Contaminants other than those previously identified are being handled
- A different type of operation is initiated
- Employees are handling leaking drums or containers or working in areas with obvious liquid contamination
- During confined space work



Air monitoring will consist at a minimum of the criteria listed below. All air monitoring data will be documented and available in the command post site files for review by all interested persons. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications. Calibration and maintenance performed will be entered in the site log and/or instrument log book.

8.2 Site Specific Air Monitoring Requirements

Health Hazard Monitoring:					
Real Time (Air, noise, heat, radiation, light)					
Activity	Target Analyte	Instrument	Frequency	Action Levels	Actions/Upgrade and Rationale
NONE REQUIRED					

9.0 **SITE CONTROL AND GENERAL FIELD SAFETY RULES**

9.1 Work Zones

The primary purpose for site controls is to establish the hazardous area perimeter, to reduce migration of contaminants into clean areas and to prevent access or exposure to hazardous materials by unauthorized persons.

At the end of each workday, the site should be secured or guarded, to prevent unauthorized entry. The United States Air Force requires site access forms to be completed to allow entry to the various facilities. EnviroSmart will comply with all security access and badging requirements throughout the duration of this project.

Site work zones will include:

Clean Zone/Support Zone (SZ)

This uncontaminated support zone or clean zone will be the area outside the exclusion and decontamination zones and within the geographic perimeters of the site. This area is used for staging of materials, parking of vehicles, office and laboratory facilities, sanitation facilities, and receipt of deliveries. Personnel entering this zone may include delivery personnel, visitors, security guards, etc., who will not necessarily be permitted in the exclusion zone. All personnel arriving in the support zone will upon arrival, report to the command post and sign the site entry/exit log. There will be one controlled entry/exit point from the clean zone to the decontamination zone.

- 1) Location of Clean Zone: Site entrance



Contamination Reduction Zone (CRZ)

The contamination reduction zone will provide a location for removal of contaminated personal protective equipment and final decontamination of personnel and equipment. Not applicable to this project.

Exclusion Zone/Hot Zone (EZ)

The exclusion zone or contaminated area is not applicable to this project.

9.2 General Field Safety Rules

- Horseplay is not permitted at any time.
- All visitors must be sent to the command post.
- It is EnviroSmart policy to practice administrative hazard control for all site areas by restricting entrance to exclusion zones to essential personnel and by using operational SOPs, if necessary.
- Whenever possible, avoid contact with contaminated (or potentially contaminated) surfaces. Walk around (not through) puddles and discolored surfaces. Do not kneel on the ground or set equipment on the ground. Stay away from any waste drums unless necessary. Protect equipment from contamination by bagging.
- Eating, drinking, or smoking is permitted only in designated areas in the support zone.
- Hands and face must be thoroughly washed upon leaving the decon area.
- Beards or other facial hair that interferes with respirator fit will preclude wearing a respirator.
- All equipment must be decontaminated or discarded upon exit from the exclusion zone.
- All personnel exiting the exclusion zone must go through the decontamination procedures.
- Personal Protective Equipment described in Section 6.0 will be required for all field personnel.
- Personnel will only travel in vehicles where individual seats for each occupant are provided.
- Seat belts will be worn as required.
- Fire extinguishers will be available on site and in all areas with increased fire danger such as the refueling area.
- A minimum of two personnel will always be on site whenever heavy equipment is operated.
- Only necessary personnel need to be on or around heavy equipment.



- Employees will not interfere with or tamper in any way with air monitoring equipment.
- Backhoes or other equipment with booms shall not be operated within 10 feet of any electrical conductor. Not applicable to this project.

Minimum Clearance from Energized Overhead Electric Lines

NOMINAL SYSTEM VOLTAGE	MINIMUM REQUIRED CLEARANCE
0-50 kV	20 feet
51-100 kV	22 feet
101-200 kV	25 feet
201-300 kV	30 feet
301-500 kV	35 feet
501-750 kV	35 feet
751-1000 kV	45 feet

- Visitor log will be maintained with the Site Supervisor. All personnel coming on site will sign in and out on a daily basis.
- Security will be maintained at the site by closing all gates during normal work hours. Site will be locked up in the evening.
- If unauthorized members of the public are found on site, contact the PM immediately and do not leave the individual unattended.
- Visitors are not allowed in the work areas without authorization. Visitors must sign in at the Command Post and receive authorization to enter the site.
- Buddy System
 - The buddy system is mandatory at anytime that personnel are working in the exclusion zone, remote areas, on tanks, or when conditions present a risk to personnel.
 - A buddy system requires at least two trained/experienced people who work as a team and maintain at a minimum audible and/or visual contact while operating in the exclusion zone.
- Communication Procedures
 - Radios or cellular phones will be used for onsite communications and Channel (Repeater) will be the designated channel.
 - The crews should remain in constant radio or visual contact while on site.



10.0 DECONTAMINATION PROCEDURES

In general, all chemical-laden equipment, containers and waste generated during the project activities are expected to be potentially hazardous and the equipment used will require particular decontamination procedures to be determined at the time of removal.

10.1 Procedures for Equipment Decontamination

Following decontamination and prior to exit from the contamination zone (Exclusion Zone), the Site Supervisor shall be responsible for ensuring that the item has been sufficiently decontaminated. This inspection shall be included in the site log.

Equipment decontamination will consist of the following steps: Clean with soap and water solution.

10.2 Procedure for Personnel Decontamination

This decontamination procedure applies to personnel at this site wearing Level B and C protection (Not applicable to this project). These are the minimum acceptable requirements:

Station 1: Equipment Drop

Deposit equipment used on-site (tools, sampling devices and monitoring instruments, radios, etc.) on plastic drop cloths. These items must be decontaminated or discarded as waste prior to removal from the Exclusion Zone.

Station 2: Outer Boot and Outer Glove Wash and Rinse

Scrub outer boots, outer gloves and/or splash suit with decontamination solution or detergent water. Rinse off using water.

Station 3: Outer Boot and Glove Removal

Remove outer boots and gloves. If outer boots are disposable, deposit in container with plastic liner. If non-disposable, store in a clean dry place.

Station 4: Outer Garment Removal

If applicable, remove SCBA and remain on air as long as possible. Remove Chemical Resistant Outer Garments and deposit in container lined with plastic. Decontaminate or dispose of splash suits as necessary.

Station 5: Respiratory Protection Removal

Remove hard-hat, face-piece, and if applicable, deposit SCBA on a clean surface. APR cartridges will be discarded as appropriate. Wash and rinse respirator at least daily. Wipe off and store respiratory gear in a clean, dry location.



Station 6: Inner Glove Removal

Remove inner gloves. Deposit in container for disposal.

Station 7: Field Wash

Thoroughly wash hands and face with soap and water. Shower as soon as possible.

Eating, drinking, chewing gum/tobacco, smoking, or any practice that increases the probability of hand to mouth transfer and/or ingestion of materials is prohibited in any areas where the possibility of contamination exists and is permitted only in the designated break area.

Personnel will not wear or bring contaminated clothing into the break areas.

10.3 Emergency Decontamination

Emergency decontamination will consist of the following steps:

(Any blood contaminated material will be bagged, labeled and accompany the individual to the hospital.)

10.4 Disposition of Decontamination Wastes

[1] All equipment and solvents used for decontamination shall be decontaminated or disposed of with the established waste streams.

[2] Commercial laundries or cleaning establishments that decontaminate or are used to launder contaminated clothing shall be informed of the presence and potentially harmful effects of the contaminants.

11.0 HAZARD COMMUNICATION

Each contractor will be responsible for maintaining a copy of their Hazardous Communication Program and MSDS on site, if applicable. The following items are specific to this job site:

11.1 Material Safety Data Sheets

1. Material Safety Data Sheets will be maintained by the Site Supervisor in the Health and Safety Binder or readily available electronically.
2. MSDS will be available to all employees for review during the work shift.

11.2 Container Labeling

1. All containers received on site will be inspected by the contractor using the material to ensure the following:
 - a. all containers clearly labeled
 - b. appropriate hazard warning
 - c. name and address of the manufacturer



11.3 Employee Training and Information

1. Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following:
 - a. an overview of the requirements contained in the Hazardous Communication Standard
 - b. hazardous chemicals present at the site
 - c. the location and availability of the written Haz Com Program
 - d. physical and health effects of the hazardous chemicals
 - e. methods of preventing or eliminating exposure
 - f. emergency procedures to follow if exposed
 - g. how to read labels and review MSDS' to obtain information
 - h. location of MSDS file and location of hazardous chemical list

12.0 **EMERGENCIES/INCIDENTS/INJURIES**

It is essential that site personnel be prepared in the event of an emergency. Emergencies can take many forms; illnesses or injuries, chemical exposure, fires, explosions, spills, leaks, releases of harmful contaminants, or sudden changes in the weather. The following sections outline the general procedures for emergencies. Emergency information should be posted as appropriate.

12.1 Emergency Contacts for the XXX Site

SERVICE	CITY/LOCATION	EMERGENCY PHONE
Fire	Goose Creek, South Carolina	911
Police	Goose Creek, South Carolina	911
Sheriff	Goose Creek, South Carolina	911
Ambulance	Goose Creek, South Carolina	911
*Hospital	Trident Regional Medical Center	843-797-7000
Poison Control Center		800 222-1222

*Map and directions to the hospital and clinic from site located in Attachment B

The following individuals have been trained in CPR and First Aid: Abby Miller, Bryon Snow, Ryan Galloway

12.2 Additional Emergency Numbers

National Response Center	800-424-8802 (24 hr)
Center for Disease Control	404-488-4100 (24 hr)
AT&F (Explosives Information)	800-424-9555
Chemtrec	800-424-9300

P.O. BOX 20666, Charleston, SC 29413
Phone: (843) 722-0062 Fax: (843) 722-0082



EnviroSmart Contacts

EnviroSmart
EnviroSmart (Charleston, SC)

843-670-3975 (24 Hr.)
843-722-0062

12.3 Emergency Equipment Available On-Site

COMMUNICATIONS EQUIPMENT	LOCATION
Public Telephones	N/A
Private Telephones	Office Area
Mobile Telephones	Site Supervisor – Abby Miller: 843-200-3865 (cell)
Two-Way Radios	Office Trailer, and with crew members
Emergency Alarms/Horns	Vehicle Horns / Air Horn
Other:	N/A

MEDICAL EQUIPMENT	LOCATION
First Aid Kits	PM Vehicle / Office
Stretcher/Backboard	N/A
Eye Wash Station: (within 100 feet of hazard zone)	Centralized location to work area and sequence event. Assuming the lab will have an eyewash available.
Safety Shower	Centralized location to work area and sequence event. Assumes the lab will have a safety shower present.

FIRE FIGHTING EQUIPMENT	LOCATION
Fire Extinguishers	PM Vehicle / Office / In work area
Other	N/A

SPILL OR LEAK EQUIPMENT	LOCATION
Absorbent Boom/Pads:	Outside decontamination area, various locations inside the work area to be made readily available
Dry Absorbent:	Outside the decontamination area, various locations inside the work area to be made readily available

ADDITIONAL EMERGENCY EQUIPMENT	LOCATION
N/A	



12.4 Incident Reporting/Investigations

- All incidents, including personal injury and property damage, must be reported to the Site Supervisor, or SSHO immediately.
- The Site Supervisor will contact EnviroSmart's Corporate Health and Safety by telephone immediately. The Site Supervisor, SSHO, and effected employees will conduct an immediate investigation of the incident and document all results on the Incident and Investigation Report form.
- The Site Supervisor will assign a supervisory individual to accompany all injured personnel to the clinic and follow guidelines outlined in the EnviroSmart Return to Work Program.
- Copies of all Incident and Investigation Reports will be sent to the EnviroSmart's Corporate Health and Safety Manager.

13.0 **EMERGENCY RESPONSE CONTINGENCY PLAN**

13.1 Personnel Responsibilities

SITE SUPERVISOR

As the administrator of the project, the Site Supervisor has primary responsibility for responding to and correcting emergency situations. The Site Supervisor will:

- Take appropriate measures to protect personnel including: withdrawal from the exclusion zone, total evacuation and securing of the site or up-grading or down-grading the level of protective clothing and respiratory protection.
- Take appropriate measures to protect the public and the environment including isolating and securing the site, preventing run-off to surface waters and ending or controlling the emergency to the extent possible.
- Ensure that appropriate Federal, State and local agencies are informed, and emergency response plans are coordinated. In the event of fire or explosion, the local fire department should be summoned immediately. In the event of an air release of toxic materials, the local authorities should be informed in order to assess the need for evacuation. In the event of a spill, sanitary districts and drinking water systems may need to be alerted.
- Ensure that appropriate decon treatment or testing for exposed or injured personnel is obtained.
- Determine the cause of the incident and make recommendations to prevent the recurrence.
- Ensure that all required reports have been prepared.



13.2 Medical Emergencies:

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to Corporate Health and Safety.

Any person transporting an injured/exposed person to a clinic or hospital for treatment should take with them directions to the hospital and information on the chemical(s) they may have been exposed to. Any vehicle used to transport contaminated personnel, will be cleaned or decontaminated as necessary.

13.3 Fire or Explosion:

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival the PM or designated alternate will advise the fire commander of the location, nature and identification of the hazardous materials on site.

If it is safe to do so, site personnel may:

- Use firefighting equipment available on site.
- Remove or isolate flammable or other hazardous materials that may contribute to the fire.

13.4 Spills, Leaks or Releases:

In the event of a spill or a leak, site personnel will:

- Locate the source of the spillage and stop the flow if it can be done safely.
- Begin containment and recovery of the spilled materials.

13.5 Evacuation Routes and Resources:

- Evacuation routes have been established by work area locations for this site. All buildings and outside work areas have been provided with two designated exit points. Evacuation should be conducted immediately, without regard for equipment under conditions of extreme emergency. See site map for evacuation routes.
- Evacuation notification will be three blasts on an air horn, vehicle horn, or by verbal communication via radio.
- Keep upwind of smoke, vapors or spill location.
- Exit through the decontamination corridor if possible.



- If evacuation is not via the decontamination corridor, site personnel should remove contaminated clothing once they are in a location of safety and leave it near the exclusion zone or in a safe place.
- The PM will conduct a head count to insure all personnel have been evacuated safely.
- In the event that emergency site evacuation is necessary, all personnel are to:
 1. Escape the emergency situation;
 2. Decontaminate to the maximum extent practical; and,
 3. Meet at the command post.
- In the event that the command post is no longer in a safe zone, meet: Upwind location TBD.



ATTACHMENT A

SITE SAFETY PLAN AMENDMENTS

NONE as of Febraury 1, 2013.



ATTACHMENT B

SITE-SPECIFIC TRAINING RECORD

This is to advise that _____ conducted a Site-Specific Training

(Instructor's name)

course for _____ at the

(Company Name)

_____ project on _____.

(TO #, Project Name)

(Date)

The total duration of the instructions was _____ hours.

Instruction covered the topics checked off below:

- Site Location, Description and History
☐
- Potential site hazards (chemical, physical, and biological)
☐
- Chemical, physical, and toxicological properties of site contaminants
☐
- Safe work practices
☐
- Training requirements
☐
- Medical Surveillance
☐
- Control Zones
☐



- Monitoring
☐
- Selection, use, and limitation, of personal protective equipment
☐
- Personnel and equipment decontamination
☐
- Emergency response procedures
☐
- Hazard communication
☐
- Blood borne pathogen briefing
☐

The following participant attended the training course for the full duration indicated above.

Name (Print)

Signature



ATTACHMENT C

Site Maps

NONE PROVIDED AS OF February 1, 2013.

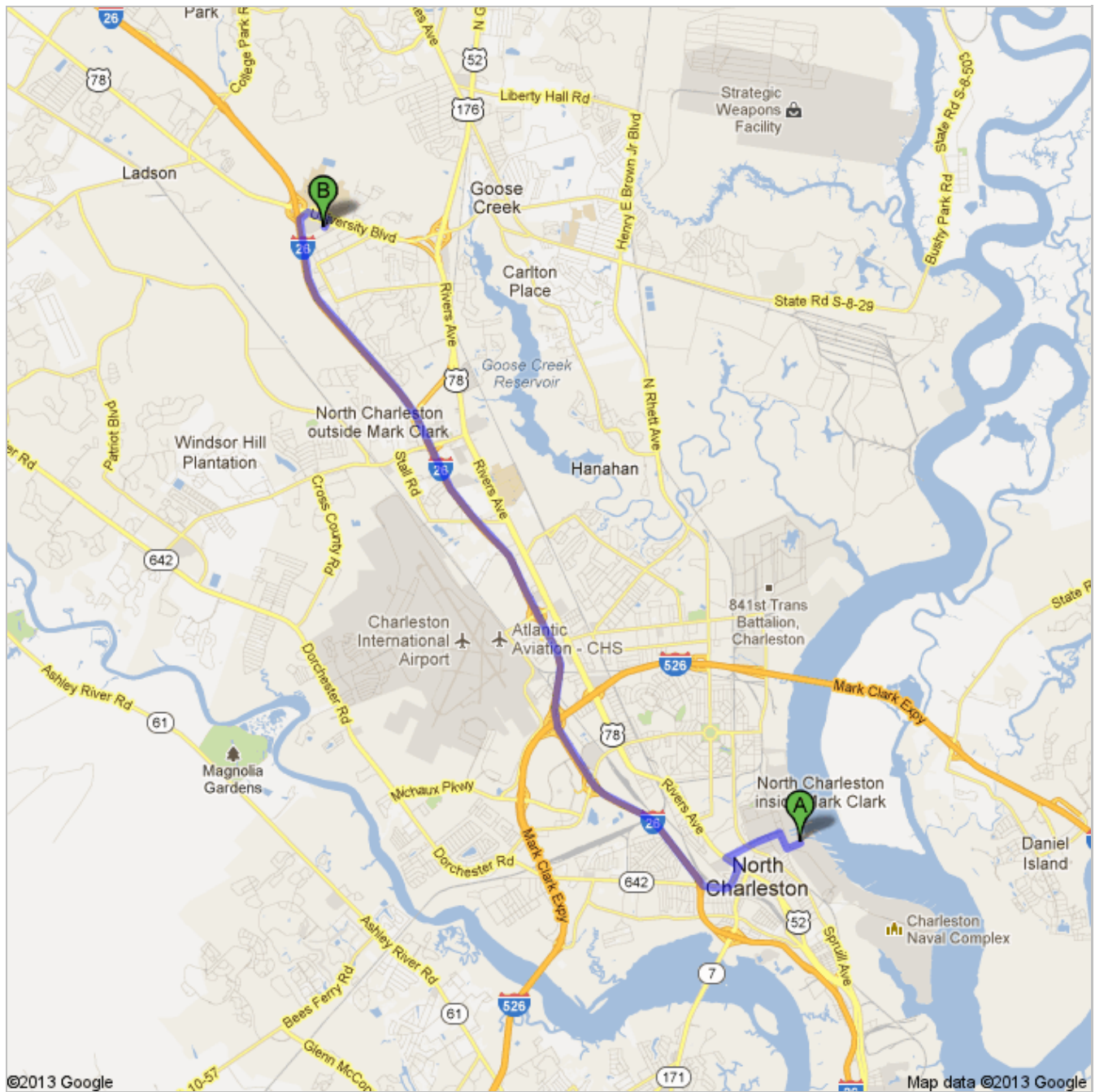


HOSPITAL AND OCCUPATIONAL CLINIC ROUTE

P.O. BOX 20666, Charleston, SC 29413
Phone: (843) 722-0062 Fax: (843) 722-0082



Directions to 9330 Medical Plaza Dr, North Charleston, SC
13.0 mi – about 18 mins



A

Pipefitter St & A Ave S, North Charleston, SC 29405

1. Head **west** on **5th St/Pipefitter St** toward **Ave B**

go 0.2 mi
total 0.2 mi
- 2. **5th St/Pipefitter St** turns right and becomes **Noisette Blvd**

go 0.2 mi
total 0.4 mi
- ↶

3. Turn left onto **McMillan Ave**

About 3 mins

go 0.8 mi
total 1.2 mi
- ↶

4. Turn left onto **Rivers Ave**

About 2 mins

go 0.2 mi
total 1.4 mi
- 5. Take the 1st right onto **Dorchester Rd**

About 1 min

go 0.6 mi
total 2.0 mi
- 6. Turn right onto the **I-26 W** ramp to **Columbia**

go 0.2 mi
total 2.2 mi
- 

7. Merge onto **Interstate 26 W**

About 10 mins

go 10.1 mi
total 12.3 mi
- 8. Take exit **205B** to merge onto **US-78 E/University Blvd** toward **US-52 E**

go 0.6 mi
total 12.9 mi
- 9. Turn right onto **Medical Plaza Dr**

go 0.1 mi
total 13.0 mi

B

9330 Medical Plaza Dr, North Charleston, SC

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.


Map data ©2013 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.



ATTACHMENT D

JOB HAZARD ANALYSIS

	EnviroSmart Safety Management System			Doc No:	ASBAW
				Initial Issue Date	2/5/13
				Revision Date:	Initial Version
	ASBESTOS AWARENESS			Revision No.	0
Next Review Date:				2/5/14	
Preparation: Safety Mgr				Authority: President	Issuing Dept: Safety

Purpose

The purpose of this procedure is to advise EnviroSmart employees in areas where asbestos is suspected on an awareness level basis about the properties and dangers of asbestos, general guidelines and training requirements and to provide basic precautions and protections for employees to avoid exposure to asbestos containing material (ACM) or presumed asbestos containing material (PACM).

Scope

This procedure applies to EnviroSmart operations where employees whose work activities may be in the vicinity of asbestos containing materials during their work activities. When work is performed on a nonowned or operated site, the operator's program shall take precedence, however, this document covers EnviroSmart employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Key Responsibilities

Managers/Supervisors

- Ensure owners or operators are notified of PACM.
- Prohibit EnviroSmart employees from working until material in question is confirmed as non-asbestos or abated.
- Ensure proper employee asbestos awareness training is completed.

All Employees

- All employees are required to act in strict compliance with the requirements of this program and delay or discontinue work if there is ever an unresolved concern regarding exposure to asbestos.
- Immediately report any suspected asbestos containing material to their supervisor


Awareness Level Requirements and Information

Asbestos Exposure Control

Depending on the exposure level EnviroSmart is required to develop and train workers on an Asbestos Exposure Controls Plan.

Background of Asbestos

The word asbestos is derived from a Greek word that means inextinguishable or indestructible. Asbestos is a naturally occurring mineral that is found throughout the world. Asbestos has several characteristics that make it desirable for many commercial uses. The fibers are extremely strong, flexible, and very resistant to heat, chemicals and corrosion. Asbestos is also an excellent insulator and the fibers can be spun, woven, bonded into other materials, or pressed to form paper products. For these reasons and because it is relatively inexpensive asbestos has been widely used for many years and now is found in over three thousand different commercial products.

	EnviroSmart Safety Management System			Doc No:	ASBAW
				Initial Issue Date	2/5/13
				Revision Date:	Initial Version
ASBESTOS AWARENESS				Revision No.	0
				Next Review Date:	2/5/14
Preparation: Safety Mgr	Authority: President	Issuing Dept: Safety		Page:	Page 2 of 4

Exposure to asbestos fibers can cause serious health risks. The major risks from asbestos come from inhaling the fibers. Asbestos is composed of long silky fibers that contain hundreds of thousands of smaller fibers. These fibers can be subdivided further into microscopic filaments that will float in the air for several hours. Asbestos fibers can easily penetrate body tissues and cause disabling and fatal diseases after prolonged exposure.

Although exposure to asbestos is potentially hazardous, health risks can be minimized. In most cases the fibers are released only if the asbestos containing materials (ACM) is disturbed. Intact and undisturbed asbestos materials do not pose a health risk. The mere presence of asbestos does not mean that the health of occupants is endangered. When ACM is properly managed, release of fibers into the air is prevented or minimized, and the risk of asbestos related disease can be reduced to a negligible level. However, asbestos materials can become hazardous when they release fibers into the air due to damage, disturbance, or deterioration over time.

The ability to recognize the kinds of material that contain asbestos, knowing under what conditions they are dangerous, and understanding basic safety precautions, are all important in keeping exposures to a minimum.

Health Effects of Asbestos

The most dangerous exposure to asbestos is from inhaling airborne fibers. The body's defenses can trap and expel many of the particles. However, as the level of asbestos fibers increase many fibers bypass these defenses and become embedded in the lungs. The fibers are not broken down by the body and can remain in body tissue indefinitely. Exposure to asbestos has been shown to cause respiratory diseases such as lung cancer, asbestosis, mesothelioma and various types of cancer of the stomach and colon.

Possible Locations Where Employees May Be Exposed to Asbestos During Their Job Functions

Asbestos materials are used in the manufacture of heat-resistant clothing, automotive brake and clutch linings, and a variety of building materials including insulation, soundproofing, floor tiles, roofing felts, ceiling tiles, asbestos-cement pipe and sheet and fire-resistant drywall. Asbestos is also present in pipe and boiler insulation materials, pipeline wrap and in sprayed-on materials located on beams, in crawlspaces, and between walls.

Client owned and/or operated equipment and facilities, where surfacing material or insulation is present, must be confirmed non-asbestos before COMPANY employees disturb that material. Where surfacing material or insulation cannot be confirmed non-asbestos, the client or owner must test, and where necessary abate, the material before COMPANY employees are permitted to work.


Types of Asbestos

Asbestos can be defined as friable or non-friable. Friable means that the material can be crumbled with hand pressure and is therefore likely to emit fibers. The fibrous or fluffy sprayed-on materials used for fireproofing, insulation, or sound proofing are considered to be friable and they readily release airborne fibers if disturbed.

Materials such as vinyl-asbestos floor tile or roofing felts are considered non-friable and generally do not emit airborne fibers unless subjected to sanding or sawing operations. Asbestos cement pipe or sheet can emit airborne fibers if the materials are cut, abraded or sawed, or if they are broken during demolition operations.

Identifying Asbestos

There are many substances that workers contact that may contain asbestos and have the potential to release fibers. Only rarely can asbestos in a product be determined from labeling or by consulting the manufacture. The

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presence of asbestos cannot be confirmed visually in many cases. The only way to positively identify asbestos is through laboratory analysis of samples. If the presence of asbestos is suspected always assume that it is an asbestos containing material and have it analyzed.

Employees will abide warning signs and labels and will not disturb the asbestos containing material.

Signs and labels shall identify the material which is present, its location, and appropriate work practices which, if followed, will ensure that Asbestos Containing Material (ACM) and/or Presumed Asbestos Containing Material (PACM) will not be disturbed. COMPANY shall ensure that employees working in and adjacent to regulated areas comprehend the warning signs.

General Safety Precautions


The following general precautions will reduce exposure and lower the risk of asbestos related health problems:

- Drilling, sawing, or using nails on asbestos materials can release asbestos fibers and should be avoided.
- Floor tiles, ceiling tiles or adhesives that contain asbestos should never be sanded.
- Use care not to damage asbestos when moving furniture, ladders, or any other object.
- Know where asbestos is located in your work area. Use common sense when working around products that contain asbestos. Avoid touching or disturbing asbestos materials on walls, ceilings, pipes, ducts or boilers.
- All asbestos containing materials should be checked periodically for damage or deterioration. Report any damage, change in condition or loose asbestos containing material to a supervisor.
- All removal or repair work involving asbestos must be done by specially trained personnel.
- Asbestos should always be handled wet to help prevent fibers from being released. If asbestos is soaked with water or a mixture of water and liquid detergent before it is handled, the fibers are too heavy to remain suspended in the air.
- In the presence of asbestos dust above the PEL, the use of a respirator approved for asbestos work is required. A dust mask is not acceptable because asbestos fibers will pass through it.
- Dusting, sweeping, or vacuuming dry asbestos with a standard vacuum cleaner will put the fibers back into the air. A vacuum cleaner with a special high efficiency filter (HEPA) must be used to vacuum asbestos dust.
- If a HEPA vacuum is not used clean-ups must be done with a wet cloth or mop. The only exception to this would be if the moisture presents an additional hazard such as around electricity.

Remember, the mere presence of asbestos itself does not create a health hazard unless the material is disturbed and releases fibers to the atmosphere. Protect yourself and others by being aware of where asbestos is located, the dangers involved and using common sense when working around ACM.

Multiple Worksites

When working on multi-contractor worksites our employees shall be protected from exposure. If employees working adjacent to Class I asbestos jobs are exposed to asbestos due to the inadequate containment of such jobs EnviroSmart shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

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Personnel Air Monitoring

Depending on the exposure level EnviroSmart is required to perform air sampling.

Medical Surveillance Program

All EnviroSmart employees who are exposed to asbestos at the regulated level shall be included in the EnviroSmart medical surveillance program.

Respiratory Protection

The only circumstances that will necessitate EnviroSmart employees using respiratory equipment for protection against asbestos is during the asbestos exposure assessment process, while confirming (via personnel monitoring) that the engineering controls and work practices designed and employed for a particular work activity are adequate to maintain exposure levels below the PEL/excursion limit. Asbestos work that requires respiratory equipment beyond the PEL should be performed by a qualified contractor.

Waste Disposal

Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing shall be collected and disposed of in sealed, labeled impermeable bags of greater than 6 mils thickness or other closed, labeled, impermeable containers.

Training


Asbestos awareness training is required for employees who work in areas that contain or may contain asbestos and the training is documented.

Asbestos awareness training is required for employees whose work activities may contact Asbestos Containing Material (ACM) or Presumed Asbestos Containing Material (PACM) but do not disturb the ACM or PACM during their work activities.

Training elements are to include:

- The health effects associated with asbestos exposure;
- The relationship between smoking and exposure to asbestos producing lung cancer;
- The quantity, location, manner of use, release, and storage of asbestos and the specific nature of operations which could result in exposure to asbestos;
- The engineering controls and work practices associated with the employee's job assignment;
- The specific procedures implemented to protect employees from exposure to asbestos, such as appropriate work practices, emergency and clean-up procedures and personal protective equipment to be used.
- The purpose, proper use, and limitations of respirators and protective clothing, if appropriate;
- The purpose and a description of the medical surveillance program;
- The content of the OSHA asbestos standard, including appendices.
- The requirements for posting signs and affixing labels and the meaning of the required legends for such signs and labels.

Subcontractors performing work shall comply with the requirements of this standard and all applicable regulatory and environmental regulatory requirements.

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Purpose

The COMPANY Behavior Based Safety (BBS) initiative is an education and observation process used to improve safety and reduce risk in the workplace. This process uses a proactive approach and is intended to communicate to employees the elements and the procedures of Behavior Based Safety that will assist in reducing at risk behaviors which in turn reduces injuries in our workplaces.

Scope

The COMPANY BBS applies to all staff. Employees are permitted to participate in BBS initiatives already in place at customer locations if required by the customer. Employees are requested to participate in Behavior Based Safety process and follow the process guidelines.

Requirements

Safety awareness principles are the foundation of the COMPANY Behavior Based Safety process. The key concepts teach employees to recognize when they may be in one of the following states:


- Rushing
- Frustration
- Fatigue
- Complacency (which can cause or contribute to these critical errors)
- Eyes not on task
- Mind not on task
- Line of fire
- Loss of balance/traction/grip (which in turn increase the risk of injury.)

Pre-task Analysis is a process to evaluate the work environment by performing a Job Safety Analysis (JSA) of each job. The purpose of which is to eliminate or control all hazards that may be encountered to complete the job. This process is included in the Behavior Based Safety process to establish the correct habits and work procedures in order to reduce at-risk behaviors.

The observation process is designed to raise safety awareness and provide a feedback mechanism for management to make changes in design, process or procedure in order to reduce at-risk behaviors. The key to this process is raising awareness of behavior through observation and feedback. The process has three key elements:

Conducting Observations of Employees Work Behavior

Observations provide direct, measurable information on employee work practices identifying both safe and unsafe behaviors. The process starts with the observation of workers - fellow employees, other contractor employees and customer employees as they perform their tasks. Observers collect information about worker performance and provide feedback via the observation card. The emphasis is not on who was observed but rather what behavior was observed.

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During the observation the observer records their findings on the BBS Observation Form. Items to be observed include but are not limited to:

- Personal Protective Equipment
- Procedures / Methods
- People
- Work Environment
- Equipment

Upon completion of an observation the observer is expected to have a discussion with the observed to get feedback. The observer will:

- Review the observation with observed employee.
- Start with a positive comment.
- Reinforce safe behaviors observed first.
- Describe and discuss unsafe behaviors observed.
- Solicit from observed employee explanation of his/her unsafe behavior with open-ended questions.
- Re-emphasize no consequence to observed employee.

Documenting feedback allows workers to assess what should be repeated and what should change to reduce risks in the workplace.

Collection of Data and Performing Trend Analysis

Individual departments, as well as COMPANY as a whole, will compare these measurements and track these results by an acceptable method so that numerical and statistical comparisons can be made over time.

BBS Observation Forms are forwarded to the corporate safety manager for input into the BBS database. Reports are generated and forwarded to management. COMPANY will collect data and performing trend analysis based on the information.

Elements of an Action Plan After the Trend Analysis is Completed


Once trend analysis is complete, appropriate action plans shall be developed to address unsafe behaviors. Action planning will include:

- Evaluate unsafe behaviors from trend analysis and prioritize
- Develop action plan for unsafe behaviors based on comments and feedback from data sheets
- Designate responsible parties and timeframes within the action plan
- Define who is responsible for action planning
- Ensure management support

Action Plan Follow Up

All action plans shall be arranged by a set time period. To ensure effectiveness of the BBS follow-up is necessary to ensure the closure of all actions listed. The follow-up process will include:

- Monthly frequency for review of action by the safety manager, senior management and employees.
- Assign accountability for closeout of action plans within COMPANY.
- Document archiving of action plans with completed action items.

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Responsibilities

Oversight

The manager/supervisor has these oversight responsibilities:

- Coach observers and develop action plans to ensure continuous improvement.
- Ensure that all employees are trained on the Behavior Based Safety elements.
- Maintain communication with workforce by channeling information in a timely manner (feedback).
- Collect and review process modification change requests from employees.
- After reviewing and giving feedback the BBS/JSA cards should be forwarded to the corporate safety director for data entry.

Each employee plays a specific role in the Behavioral Based Safety process. These roles include observee, observer, supervisor, manager and safety manager.

Person being observed


- Be willing to be observed.
- Be open and cooperative.
- Avoid being defensive.
- Participate in problem-solving meetings.
- Be familiar with the Behavior Based Safety process.

Person performing the observation

- Learn the Behavior Based Safety process and the benefits of reducing at-risk behaviors.
- Promote the Behavior Based Safety process.
- Make observing proactive.
- Be open to coaching.
- Be courteous and helpful.
- Assist workers by offering suggestions to safely perform a task or help them with a task if necessary.
- Communicate with the workers being observed.
- Give constructive feedback after observations.
- Stress the safe behaviors before the at-risk behaviors.
- Offer and work towards solutions of problems found.
- Record a comment for every recorded "at-risk" to include what and why. Make quality observations, concentrating on quality comments.

Manager

- Actively promote and participate in the behavior safety process by supporting the goals and objectives of the Behavior Based Safety process.
- Ensure that all employees are aware of what is expected of them regarding the BBS process.
- Encourage employees to participate in observations so that incidents/injuries are reduced in the workplace.
- Provide necessary resources to keep process productive.
- Attend safety meetings and offer feedback on areas of improvement.

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Supervisor

- Actively promoting and participating in the Behavior Based Safety process by reviewing BBS Observation Forms turned in at least weekly and giving feedback, completing corrective actions needed, etc.
- Refraining from using data from the Behavior Based Safety process in a punitive manner.
- Assisting in problem solving and completing corrective actions in a timely manner.
- Understanding the behavior safety process and the benefits of reducing at-risk behaviors.

Safety Manager


- Support the goals and objectives of the Behavior Based Safety process.
- Encourage, promote, provide technical support and assist in acquiring the resources needed for the Behavior Based Safety process.
- Address the concerns and suggestions of field personnel.
- Collect all observation data cards.
- Enter data into BBS database.

Training

Training on the observation process will include how to conduct the observation, how to complete the observation form, what do the behaviors mean, feedback training and role play (mentoring and coaching) and employees should be aware they may be observed at any time.

Training will include:

- Program objectives and incident metrics reviewed.
- How to conduct the observation.
- How to complete the observation form.
- What do the behaviors mean.
- Feedback training and role play (mentoring and coaching).
- Employees should be aware they may be observed at any time.

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BBS Safety Observation Form

Your concerns for safety and suggestions as how to improve our safety program are important to COMPANY. Use this form to submit either safety improvement input and/or a BBS safety observation. Your name is optional and the name of the person being observed is not to be used.. This information will be used to continually improve our safety system and conditions.

Improvement Input

<input type="checkbox"/> BBS Observation	<input type="checkbox"/> Unsafe Act	<input type="checkbox"/> Unsafe Condition	<input type="checkbox"/> Recognition	<input type="checkbox"/> Environmental
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Employee/Observer Input :

Employee's Action Taken or Recommendation:

Supervisor or Management Action Taken:

Safety Observation S=Safe C=Concern Critical Factors

PPE / Procedures / Methods			Body Position / Mechanics			Slips / Trips			Equipment / Work Environment		
S	C	Eye & Head	S	C	Proper Position	S	C	Proper Footwear	S	C	MSDS If Needed
S	C	Hand & Body	S	C	Ask for Help	S	C	Aware of Hazards	S	C	Lock Out
S	C	Footwear	S	C	Use Dolly	S	C	Prompt Clean Up	S	C	Tools are Safe
S	C	Trained on Task	S	C	Smaller Loads	S	C	Tripping Hazards	S	C	Adjacent Work
S	C	Work Permit / JSA	S	C	Don't Twist Body	S	C	Not Rushing	S	C	Signage if Needed
S	C	All trained in BBS	S	C	Get Close to Item	S	C	Step Conditions	S	C	Spill Control


Observer's feedback given to other employee:

Location:

Observer Name:

Date:

Promptly after observation give this form to your supervisor who will review it and who must then forward it to the COMPANY Safety Manager for action.

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Purpose

Each EnviroSmart location shall have a written Emergency Action Plan, appropriate to the hazards of the workplace, in order to respond to an emergency that may require rescue or evacuation.

Each Emergency Action Plan shall be prepared to reflect all known probable emergency conditions which may arise from within the workplace and from adjacent workplaces, the minimum of which will include fire or other emergencies.

The emergency action plan must be available to all employees to review. An emergency action plan must be in writing, kept in the workplace and available to employees for review. However, if a site has 10 or fewer employees the plan may be orally to employees.

Emergency Response Planning, Issuing and Annual Review Guidelines

Emergency Procedures shall be issued and discussed with all new/transferred personnel upon arrival for assignment.

Emergency Action Plans shall be established, implemented, reviewed, maintained and updated annually in conjunction with:

- Client emergency services department requirements.
- COMPANY safety staff and management.
- The requirement to ensure the plan is up to date to reflect current circumstances at the workplace.

The plan is to be reviewed before the job and when conditions warrant and should be used for routine and non-routine emergencies as well as changes in operation, and products or services which warrant new emergencies situations.

Reviewing the Emergency Action Plan with Employees

A review of the emergency action plan should occur with employees:


- When the plan is developed or the employee is assigned initially to a job.
- When the employee's responsibilities under the plan change.
- When the plan is changed.

Procedures for Emergency Evacuation Planning

The emergency action plan must include procedures for emergency evacuation. An emergency action plan must include at a minimum procedures for emergency evacuation, including type of evacuation and exit route assignments.

The individual site evacuation procedure shall be appropriate to the risk must be developed and implemented to:

- Notify staff, including the first aid attendant, of the nature and location of the emergency,
- Evacuate employees safely and procedures to account for all employees after evacuation,
- Check and confirm the safe evacuation of all employees,

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- Notify the fire department or other emergency responders, and
- Notify adjacent workplaces or residences which may be affected if the risk of exposure to a substance extends beyond the workplace. Notification of the public must be in conformity with the requirements of other jurisdictions, including provincial and municipal agencies.

List of Potential Emergencies

The emergency action plan must include procedures for reporting a fire or other emergency. An emergency action plan must include at a minimum procedures for reporting a fire or other emergency.

Each location shall conduct a risk assessment for hazards posed by potential hazardous substances from accidental release, fire or other such emergencies that could cause an evacuation or rescue and list the potential emergencies for COMPANY operations. Procedures for each of these potential emergencies shall be contained within the Emergency Action Plan. Examples include:

- Fire
- Gas Leaks/Chemical Spills
- Bomb Threats
- Medical Emergencies
- Explosion
- Workplace Violence

Guidance Procedures for Potential Emergencies

Fire


- Warn others in the immediate area. Notify the appropriate emergency response personnel by phone or radio and pull the nearest fire alarm if present.
- If nearby staff have been trained, and it is safe to do so, fight the fire using a portable fire extinguisher. Remember, if in doubt get out.
- Evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area.
- Re-enter only after the Emergency Coordinator has given an ALL CLEAR.

Gas Leaks/Chemical Spills - Upon smelling or noticing a gas leak or unusual vapors, or a chemical spill:

- Pull fire alarm (if present) or sound warning and evacuate the premises via the nearest exit
- Proceed to the Emergency Assembly Area
- Contact local emergency response personnel by phone or radio
- Re-enter only after the Emergency Coordinator has given an ALL CLEAR.

If employees are required to control a release of a hazardous substance, to perform cleanup of a spill, or to carry out testing before re-entry, COMPANY shall provide:

- Adequate written safe work procedures and documented training.
- Appropriate personal protective equipment which is readily available to employees and is adequately maintained, and
- Material or equipment necessary for the control and disposal of the hazardous substance.

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Bomb Threats

- If a threat is received by phone, mail or other means, get as much information as possible.
- If the threat is received by phone, try to keep the person on the line for as long as possible. Do not hang up the phone, even after the call has been terminated.
- Contact local emergency response personnel by phone or radio.
- If a suspicious device is identified, evacuate the immediate area and notify local emergency response personnel.

Medical Emergencies

- Call for assistance by phone or radio. Give the exact location and details of the medical emergency.
- If qualified, provide basic first aid, and keep the person comfortable. Do not move the person. Do not leave him/her unattended.
- Arrange for emergency medical transportation based on the medical planning portion of the site's Emergency Action Plan.

Explosions

- Get down on the floor, take shelter under tables or desks, and protect your face and head against flying glass and debris.
- Once it is safe to do so, evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area.
- Re-enter only after the Emergency Coordinator has given an ALL CLEAR.

Workplace Violence

- Notify security immediately by phone or radio and report the occurrence.
- Do NOT attempt to physically intervene. Protect yourself first at all costs.

Emergency Response Equipment


Listing of Types of Emergency Equipment

Each site Emergency Action Plan shall identify, list the locations of and provide operational procedures for types of emergency equipment. For off-site locations, available emergency equipment should be identified and reviewed with workers prior to commencing work activities. Examples include:

- Living areas with an audible alarm and a fire hose cabinet.
- Emergency lighting, exit doors, dampers and fire stop flaps.
- First aid kits located throughout the facility and in vehicles.
- Portable fire extinguishers being located throughout the facility and clearly marked.
- Only authorized and trained personnel will operate emergency equipment.

Inspection & Maintenance Records

Maintenance records must be kept, including but not limited to the name of manufacturer, the type of equipment, the date put into service, when and for what purpose the equipment has been used, the date of the last inspection and name of the inspecting person, any damage suffered, and the date and nature of any of maintenance on emergency response equipment.

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Ropes and associated equipment must be inspected visually and physically by qualified employees after each use for rescue, evacuation or training purposes.

The COMPANY designated representative will perform and maintain the COMPANY Emergency Inspection Checklist Form on a monthly basis. The checklist shall be maintained for retention in active files for two years and in on site archives for seven years.

Media Response Plan

COMPANY employees must not be interviewed by anyone unless the Legal Department has given prior approval. In most cases the Legal Department will have an attorney present for such interviews.

Note: If after COMPANY personnel have received approval for an interview from the Legal Department and another party's attorney appears unannounced, you should politely adjourn the interview until the COMPANY Legal Department can be contacted. Personnel must not give any work related interviews, affidavits, written or recorded statements, or depositions without the express approval from the COMPANY Legal Department.


In the case of interviews of COMPANY employees by non-attorneys, (law enforcement, government officials, media, etc.) you must inform the Legal Department before the interview. If the interview is taped or videotaped, you must request a copy of the tape. If the interview is reduced to writing, you must ask for a copy of any notes or statements taken. This procedure is to avoid information being misrepresented.

All media requests should be referred to the COMPANY Chief Operating Officer. Unless requested to do so by the Legal Department, other company personnel are not to give interviews or make statements to the media. Management prefers that families of personnel involved in an incident receive initial notification from a COMPANY representative and not the media.

Training

COMPANY shall ensure training for Emergency Action Plan is delivered, documented and prepares the staff and facility for emergency conditions. COMPANY will designate and train employees to assist in a safe and orderly evacuation of other employees. Requirements include:

- All employees must be given adequate instruction in the fire prevention and emergency evacuation procedures applicable to their workplace.
- The designated site representative shall provide the Emergency Action Plan orientation to all new/transferred personnel before they begin work.
- All personnel shall receive a review/update orientation at least annually, or whenever any new/revised information is to be provided.
- The Emergency Action Plan Orientation Check List shall be completed after orientation and the record maintained in the individual's training records.
- COMPANY management shall ensure that contractors/consultants working in areas under the supervision of COMPANY also receive the Emergency Action Plan orientation upon arrival to the area.

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- Employees expected to perform duties under the Emergency Action Plan will be trained prior to assuming their roles. This will include simulated rescue or evacuation exercises and regular retraining, appropriate to the type of rescue or evacuation being provided, and training records must be kept.
- A list of trained staff responders shall be posted and maintained indicating their name, response function, their work location and what type of equipment they have been trained for.

Location and Use of Emergency Facilities

COMPANY shall ensure each Emergency Action Plan lists the location and how to use emergency facilities for each work site. For off-site locations, outside services that can provide assistance in the event of an emergency should be identified and reviewed with workers prior to commencing work activities. A list shall be posted in a conspicuous area showing local emergency facilities and how to contact. Examples include:

- Client Emergency Response Department (Initial Responder for All Emergencies If Applicable)
- Local Police, Local Hospital, Poison Center (Poison Response) 1-800-332-1414, etc.

Fire Protection & Response

COMPANY shall ensure each Emergency Action Plan provides fire protection and response planning within each site Emergency Action Plan and is utilized during all phases of work. As a minimum, all shall include the following:

Protection


- Smoking is not permitted except in designated 'SMOKING' areas.
- Facilities shall be designed and maintained in accordance with local fire code and regulations.
- Portable fire extinguishers shall be stationed, inspected and maintained in accordance with local fire code and regulations. COMPANY personnel shall be trained in their use.
- Flammable and combustible liquids shall be properly stored.
- Employees shall report all fire safety issues to their immediate supervisor.
- Facilities shall be inspected by use of the COMPANY Emergency Inspection Checklist

Response

In the event of a fire, personnel working in facility will adhere to the following procedure for their work area:

- Warn others in the immediate area. Notify the appropriate emergency response personnel by phone or radio and pull the nearest fire alarm if present.
- If nearby staff have been trained, and it is safe to do so, fight the fire using a portable fire extinguisher. Remember, if in doubt get out.
- Evacuate the premises via the nearest exit and proceed to the nearest Emergency Assembly Area.
- Re-enter only after the Emergency Coordinator has given an ALL CLEAR.

Roads are designated as fire lanes. Vehicles can stop there for unloading, but no parking will be allowed.

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Alarm & Emergency Communication

Each Emergency Action Plan for COMPANY shall contain methods to address alarms and communications in case of an emergency. For off-site locations, the method of emergency notification should be identified and reviewed with workers prior to commencing work activities.

Alarm System

A system must be in place to alert employees. The alarm system shall be distinctive and recognizable as a signal to evacuate the work area or perform actions designated under the emergency action plan. For sites with 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm provided all employees can hear the alarm. Each Emergency Response plan will describe how to activate an alarm and what to do after either activating or hearing an alarm.

Personnel responding to any alarm shall avoid complacency. Every alarm should be treated as an actual incident until proven otherwise. Treating and responding to alarms as a routine happening can result in injuries, fatalities and destruction of property.

Communications

COMPANY responders and security use telephones, cell phones and radios in conjunction with emergency response.

Rescue and Evacuation Procedures

Procedures for Rescue and Medical Services

Each site Emergency Action Plan shall address who performs rescue services when required. It is the position of COMPANY that all rescue and medical duties are performed by client emergency responders or local governmental responders when on their location. For off-site locations, evacuation procedures and methods of rescue shall be identified and reviewed with workers prior to commencing work activities.

At least one member of a rescue team must be a first aid attendant trained to immobilize an injured employee.


Effective communications must be maintained between the employees engaged in rescue or evacuation and support persons.

Procedure for Evacuation

Preparation for Evacuation

Each site Emergency Action Plan shall contain a procedure for evacuation if required.

The COMPANY designated Emergency Coordinator will maintain an active list of all COMPANY and contract emergency responders.

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Critical Plant Operations Personnel

Staff designated to remain in the facility to shut down or supervise critical operations or equipment will be specifically trained and authorized by management to perform their duties before any evacuation may occur.

Evacuation Drills

Evacuation drills shall be conducted at least annually. Before conducting an evacuation drill a pre-drill assessment of the evacuation routes and assembly points shall be conducted. The pre-drill assessment is intended to verify that all egress components (stairs, doors, etc.) are in proper order and that occupants can use them safely.

Coordination Within a Facility

Emergency training and drills should also be coordinated within a COMPANY facility so that key staff are involved in the planning process and are aware of their responsibilities in an emergency as well as during the drill.

Facility management also needs to be informed of the potential for the interruption in productivity and business operations. Alternatives for the continuity of critical operations need to be considered.

Procedures to Account for All Employees After Evacuation

The emergency action plan must include procedures to account for all employees after the evacuation. An emergency action plan must include at a minimum procedures to account for all employees after evacuation. Each muster or assembly point will have a blank roster for evacuees to enter their name. All completed rosters will be gathered and checked against a master list of employees assigned or checked in at the facility to verify all employees are accounted for.

Emergency Evacuation Notification and Routes

In the event of an emergency occurring within or affecting the work site, the Emergency Coordinator makes the following decisions and ensures the appropriate key steps are taken:


- Advise all personnel of the emergency.
- Activate the emergency notification sequence to alert the appropriate responders and initiate emergency notification within the building.
- Evacuate all persons to the identified assembly area and account for everyone including visitors and clients.

All personnel will proceed to the primary safe area immediately located at the identified emergency assembly area for their location.

A copy of escape routes shall be posted in all offices, at all alarm stations and at all exits.

Sweep Check by COMPANY Designated Responders

- COMPANY trained responders will establish a pattern that will permit covering the area in the shortest time, with a minimum of backtracking.
- When the evacuation alarm rings, stop work immediately, and conduct a sweep of the area. Ask everyone to leave the premises immediately and proceed to the identified emergency assembly area for their location.
- If you encounter smoke or flame, leave that section immediately, finish your sweep and evacuate the building by activating fire alarm pull stations. Remember, if in doubt get out.

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- If anyone refuses to leave, note their name and location, and advise the client emergency services personnel.
- Meet the client emergency services personnel and advise them of your sweep or an area of smoke or flame that you were unable to check. Assist with head count and evacuation if required.
- Ensure that everyone stays at the emergency assembly area until the Emergency Coordinator has given an all clear to re-enter the building.
- In the event of inclement weather, the client will make arrangements to have buses either as temporary shelter or to transport personnel to another location.

Evacuation or Drill Evaluation

Following an evacuation or drill a response review shall be conducted and documented by the COMPANY Emergency Coordinator and lessons learned share with the appropriate responders and staff using the COMPANY Evacuation Report.

Emergency Response Program Management

Contact information will be provided to employees who need additional information pertaining to the plan or to their respective duties. The COMPANY site manager may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.

For the purpose of this Emergency Action Plan guidance the Emergency Coordinator will be designated by the COMPANY site manager. His/her alternate will be the COMPANY Site Safety Supervisor or otherwise designated by the site manager.

Employees performing rescue or evacuation must wear personal protective clothing and equipment appropriate to the hazards likely to be encountered.

Duties

COMPANY Emergency Coordinator

The COMPANY Emergency Coordinator ensures that:


- Evacuation drills are conducted on an annual basis.
- Inspections of facilities are performed monthly.
- All necessary repairs of components for evacuation paths are completed.
- Plans for the modification of any part of an evacuation path are reviewed.
- An up to date list of Fire Wardens is maintained.
- Radios and reflective vests and other response equipment are available.

During an evacuation or evacuation exercise, the COMPANY Emergency Coordinator:

- Coordinates activities in accordance with either local authorities or the client Security and ERT as required.
- Coordinates Fire Wardens and informs them the nature of the emergency via handheld radios.

Following an evacuation or evacuation exercise, the COMPANY Emergency Coordinator:

- Notifies Fire Wardens that it is safe to re-enter the building.
- Prepares a report following an evacuation (actual or drill).

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- Reports to management for follow up or corrective actions.

COMPANY Site Safety Supervisor


- Assist the COMPANY Emergency Coordinator when requested.

Fire Wardens

- Be equipped with radios and reflective vests. The equipment is to be handed into the COMPANY Emergency Coordinator and reissued to the next oncoming Fire Warden for the designated area.
- Be familiar with exits and muster stations for their responsible area.
- Direct residents safely out of the building to the designated muster station or to an alternate location.
- Sweep their effected area, ensuring that the alarms are properly functioning and that residents evacuate safely.
- In order to account for all employees after evacuation the fire wardens or designated personnel shall complete a head count and reconcile the evacuees with the attendance or daily housing report at the assigned muster station or alternate location.
- Radio unaccounted for personnel to Security.
- Notify personnel that they may re-enter the building when permission has been given by the appropriate authorities.

Residents, Contractors & Visitors

- All employees, users, contractors and visitors will follow the instructions of the Fire Wardens, Security, ERT, Safety Personnel, managers and supervisors when asked to evacuate the building.
- Know the two safest and most direct evacuation routes from their work area(s).
- Know the designated evacuation assembly point for the building.


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COMPANY Emergency Inspection Checklist

Department:	Location:	Date of Inspection:
Inspected by:	Title:	Ext:


This form is to be used monthly.

	N/A	Yes	No
EGRESS			
Is every means of egress arranged and clearly marked, so that the way to safety is unmistakable at all times?			
Are exits signs lit?			
Are there sufficient exits for the prompt escape of all employees in case of fire or other emergencies?			
Are doors that aren't exits that could be mistaken as one, clearly marked "Not an Exit"?			
Do exit doors swing out?			
Are means of egress at least 28 inches at any point and adequate width for the number of people?			
Are egresses kept clear of obstructions and materials at all times?			
Is there proper lighting for emergency exiting? (i.e. during a power failure)			
Are at least two exits by separate ways of travel available for each occupant?			
Is the minimum width of any exit way no less than 28 inches?			
Are furnishings and decorations so placed that they will not obstruct the exits, the access thereto, or the egress there from, or the visibility thereof?			
Are explosive and highly flammable furnishings or decorations prohibited?			
EMERGENCIES/EVACUATION			
Are evacuation maps posted in readily accessible places?			
Do employees know where their muster point is located?			
Do employees know area hazards, the nearest exit and alternate routes of escape?			
Do employees know the preferred means of reporting emergencies?			
Do employees know the site emergency number(s)?			
Is the site emergency number posted on or by the phone?			
Do employees know what signal indicates evacuation?			
Can all personnel perceive the employee alarm?			

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This form is to be used monthly.

	N/A	Yes	No
Do employees with special assistance needs been addressed?			
Employees questioned know where the emergency shut off is for the natural gas			
FIRE PROTECTION			
Are fire hydrants accessible?			
Are fire hydrants inspected yearly and records maintained to show the date?			
Are control and operating valves locked open or electronically supervised?			
Are fire hoses maintained and periodically tested?			
Are combustible materials kept away from ignition sources?			
Are standpipe and hose system components visually inspected quarterly?			
Is the accumulation of flammable and combustible materials controlled so they do not contribute to fire emergency?			
All product, supplies, merchandise etc. not piled within 18" of Sprinkler heads			
No Combustibles within three feet of Hot Water Tank, Space Heaters and/or Electrical panels			
All Compressed Gas Cylinders tied or chained to eliminate tipping			
DETECTION AND ALARM SYSTEMS			
Are detection systems installed and maintained?			
Are all trouble alarms and fire signals investigated?			
Do detection/alarm systems shut down or reverse HVAC systems for smoke control?			
Do detection/alarm systems close smoke or fire doors?			
Do detection/alarm systems activate local alarms?			
Are alarm and PA systems periodically tested?			
PORTABLE FIRE EXTINGUISHERS			
Does everyone know where the nearest fire extinguisher is stored?			
Has the area fire extinguisher been maintenance tested within the last year and tagged to show the date?			
Are fire extinguishers accessible and the proper type for the fire hazard?			
Are employees trained in how to use fire extinguishers?			
Is there a fire extinguisher mounted within 75 ft. of any point in an area?			
Are the extinguishers clean and well cared for?			


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This form is to be used monthly.

	N/A	Yes	No
Is the seal and lock pin in place?			
Clear access to extinguishers? Not blocked			
Is the extinguisher location plainly marked, so as to be visible at a distance?			
Is the extinguisher class marked on the extinguisher?			
FIRST AID / MEDICAL SUPPLIES			
Are first aid supplies stocked, clean, accessible and sanitary?			
Are there eye/body wash facilities near injurious corrosive materials?			
Is a person or persons adequately trained to render first aid available in the near proximity to the workplace?			
Are AEDs present and operators trained?			
Condition of First Aid Kits Acceptable			
Are employees/subcontractors familiar with the incident/accident reporting process?			
Do employees/subcontractors know where accident/incident forms are located?			

Date of last inspection of sprinkler system (required yearly) _____

Comment/Actions:

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COMPANY Evacuation Report

This form is to be used to record all emergency evacuations (including drills).

Building Details

Building Name _____ Number of Floors (including ground) _____
Designated Muster Station _____ Person Completing Form _____

Evacuation Details

Evacuation Date/Time: _____/_____ Evacuation Drill Yes ☐ No ☐
Trigger for Evacuation: Fire Alarm Activated ____ Drill ____ ERT ____ Security ____
Emergency Situation: _____

Condition: Staff Only ____ All Occupants ____ After Hours ____ Unoccupied ____ Weather _____

Number of Evacuees _____ Elapsed Time to Evacuate _____ minutes


Evacuation was orderly with no panic Yes ☐ No ☐
Mobility-impaired persons present (sight, hearing, physical, etc.)? Yes ☐ No ☐
The majority of evacuees went to the mustering points? Yes ☐ No ☐
Were the building occupants notified of this drill? Not a drill ☐ Yes ☐ No ☐

Emergency Control Organization

Emergency Coordinator _____ Deputy Emergency Coordinator _____
Emergency Coordinators were stationed at the proper emergency control point? Yes ☐ No ☐
All Fire Wardens reported to the Emergency Coordinator? Yes ☐ No ☐
If not, who did not report in? _____
All Fire Wardens were identifiable (vests, hard hats, flash lights)? Yes ☐ No ☐
Control of external building exits achieved? Yes ☐ No ☐
Did the Fire Wardens perform their duties correctly? Yes ☐ No ☐
Evacuation maps and emergency procedures posters are up-to-date? Yes ☐ No ☐

Building Fire & Emergency Equipment

Was the evacuation signal audible throughout the building? Yes ☐ No ☐
Automatic closing fire doors closed when the fire alarm activated? Yes ☐ No ☐
Card access doors automatically released when the fire alarm activated? Yes ☐ No ☐
Fire doors and emergency exits unobstructed? Yes ☐ No ☐

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Emergency Response Members

Client: Maintenance ☐ Security ☐ COMPANY Emergency Coordinator ☐ HSE ☐


Emergency Response Team Fire Brigade ☐ Ambulance ☐ Police ☐ Other: _____

COMPANY Action Sheet

Issue(s)	Action(s) Required	By Who	By When	Sign Off/Date

Records

- Keep the original in your Emergency Response folder and monitor to ensure all action items completed as soon as possible. Report delays to senior management.
- Copies shall be distributed in accordance with the COMPANY Site Emergency Action Plan.

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Emergency Action Plan Orientation Check List

Employee Name _____ Department _____


Hire/Transfer Date _____ Orientation Date _____

- ☐ Emergency Procedures
- ☐ Evacuation route(s) from assigned work area
- ☐ Evacuation from an unfamiliar area
- ☐ Location of Emergency Assembly Areas
- ☐ Receiving and following instructions during an emergency
- ☐ ALL CLEAR and re-entry procedure
- ☐ Reporting hazards and/or substandard conditions
- ☐ Advising anyone who may require assistance during an emergency evacuation
- ☐ Location of Emergency Equipment (i.e. Fire Extinguishers, etc.)

Employee Signature: _____


Orientation Conducted by: _____

Job Position/Title: _____


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Sample Emergency Action Plan Core Requirements

POTENTIAL EMERGENCIES (BASED ON HAZARD ASSESSMENT)	The following are identified potential emergencies: <ul style="list-style-type: none"> • Fire • List others 	
EMERGENCY PROCEDURES	In the event of a fire occurring within or affecting the work site, the Emergency Coordinator (or deputy) makes the following decisions and ensures the appropriate key steps are taken: <ul style="list-style-type: none"> • advise all personnel • pull the fire alarm to alert the nearest fire station and initiate all fire alarms within the building • evacuate all persons to a safe point in the assembly area and account for everyone including visitors and clients 	
LOCATION OF EMERGENCY EQUIPMENT	Emergency equipment is located at: <ul style="list-style-type: none"> • Fire Alarm – List • Fire Extinguisher – List • Fire Hose - List 	
WORKERS TRAINED IN THE USE OF EMERGENCY EQUIPMENT	(1) _____ (2) _____ (3) _____ (4) _____	
EMERGENCY RESPONSE TRAINING REQUIREMENTS	Type of Training <ul style="list-style-type: none"> • Use of fire extinguishers • Practice fire drills 	Frequency <ul style="list-style-type: none"> • Orientation and annually • At the call of site management
LOCATION AND USE OF EMERGENCY FACILITIES	The nearest emergency services are located at: <ul style="list-style-type: none"> • List facilities 	

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FIRE PROTECTION REQUIREMENTS	<ul style="list-style-type: none"> List all site fire protection requirements.
ALARM AND EMERGENCY COMMUNICATION REQUIREMENTS	<ul style="list-style-type: none"> Pulling the fire alarm automatically alerts the fire department and initiates an alarm within the building The fire alarm signal is (describe sound and pattern)
FIRST AID	<p>First aid supplies are located at:</p> <ul style="list-style-type: none"> List <p>First Aiders are:</p> <ul style="list-style-type: none"> List all names <p>Transportation for ill or injured workers is by (describe). The contact number or radio channel is (describe).</p>
PROCEDURES FOR RESCUE AND EVACUATION	<p>In case of fire:</p> <ul style="list-style-type: none"> Advise all personnel Pull the fire alarm Evacuate all persons to a safe point in the staff parking lot and account for everyone including visitors and clients Assist ill or injured workers to evacuate the building Provide first aid to injured workers if required Call emergency response personnel to arrange for transportation of ill or injured workers to the nearest health care facility if required.
DESIGNATED RESCUE AND EVACUATION WORKERS	<p>The following workers are trained in rescue and evacuation (or describe client rescue organization):</p> <p>(1) _____</p> <p>(2) _____</p> <p>(3) _____</p> <p>(4) _____</p>
<p>Completed on: _____</p> <p>Signed: _____</p>	

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FIRE PROTECTION/ EXTINGUISHERS				Revision No.	0
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The purpose of this program is to provide fire extinguisher procedures to ensure equipment is operable and employees have the knowledge to safely operate in case of a fire incident.

Scope

Applies to all COMPANY employees and all COMPANY locations.

Responsibilities

The Safety Manager is responsible for developing procedures for the use and care of fire extinguishers and for developing a training program for the proper use of these devices. The Manager is responsible for implementing fire extinguisher training at his location. The shop foremen are responsible for enforcing the provisions of this section of the safety manual. All employees are responsible for following these provisions.

Procedure


Selection and Distribution

Portable fire extinguishers shall be provided for employee use and selected and distributed based on the classes of anticipated workplace fires and on the size and degree of the hazard which would affect their use. Fire extinguishers used by this company are for four classes of fires:

- Class A Fire Extinguishers. Use on ordinary combustibles or fibrous material, such as wood, paper, cloth, rubber and some plastics. Travel distance for employees to any extinguisher is 75 feet (22.9 m) or less.
- Class B Fire Extinguishers. Use on flammable or combustible liquids such as gasoline, kerosene, paint, paint thinners and propane. Travel distance from the Class B hazard area to any extinguisher is 50 feet (15.2 m) or less.
- Class C Fire Extinguishers. Use on energized electrical equipment, such as appliances, switches, panel boxes and power tools. Travel distance from the Class C hazard area to any extinguishing agent is 50 feet (15.2 m) or less.
- Class D Fire Extinguishers. Use on combustible metals, such as magnesium, titanium, potassium and sodium. Travel distance from the combustible metal working area to any extinguishing agent is 75 feet (22.9 m) or less.

Labeling Of Fire Extinguishers

Fire extinguishers are to be mounted in easily accessible locations that are indicated by a sign that reads "Fire Extinguisher". Fire extinguishers are to be located so that no employee will ever be more than 75 feet from an extinguisher. No equipment, boxes or product may be placed (even temporarily) in the way of a fire extinguisher. Each fire extinguisher will be assigned a unique number.

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Maintenance

All fire extinguishers shall be mounted no higher and no lower than four (4) feet from the floor. All fire extinguishers shall be maintained as follows:

- Numbered to identify their proper location
- Fully charged and in operable condition
- Clean and free of defects
- Readily accessible at all times

Inspection, Maintenance and Testing

All fire extinguishers are to be visually inspected by COMPANY employees monthly. All fire extinguishers are to receive an annual maintenance check by certified personnel from a fire extinguisher dealer. Fire extinguishers are to be inspected and re-charged by certified personnel after any use.

Any fire extinguisher that shows a loss of pressure during the monthly inspection will be inspected and re-charged by certified personnel. Completed fire extinguisher inspection logs will be maintained in the safety files and become a part of the safety records. They are to be maintained for 5 years.

Use

In the event of a fire, one employee will get the nearest fire extinguisher and use it to attempt to put the fire out. All other employees in the immediate area will prepare to evacuate if needed. All other employees in the building need to be advised that a fire is in progress.

The employee attempting to extinguish the fire will break the safety seal on the handle and pull the pin. He will then aim his extinguisher at the base of the fire and discharge it with a sweeping motion from side to side; continuing until the fire is out or the extinguisher is emptied.

Remember that a standard fire extinguisher will be emptied in about 10 to 15 seconds. If the fire is not out when the extinguisher has been completely discharged, the employees must evacuate the area.

Training and Education


The purpose of this section is to establish training procedures which are necessary for the proper use and understanding of a fire extinguisher and incipient stage fire fighting. Training will occur prior to initial assignment and at least annually thereafter.

On even numbered years this training will be conducted by a member of the local fire department (where possible) and will include "live fire" hands on use of the extinguisher. On odd number years this training will be conducted by the Safety Manager and will include a demonstration of the use of a fire extinguisher, without actually discharging the unit.

New employees will be given the odd number year training upon hire.

Initial Training Outline

- General principles of a fire
- Hazards employed with an incipient stage fire(s)
- When to "back off" (evacuate) of an incipient stage fire(s)

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- General fire principles of a fire extinguisher
- Hazards employed with the use a fire extinguisher
- Use of a fire extinguisher


Retraining

Retraining shall reestablish employee proficiency and introduce new or revised control methods and procedures, as necessary. Retraining shall be provided for all authorized and affected employees whenever there is:

- An annual basis or
- A change in job assignment or
- COMPANY has reason to believe that there are deviations from or inadequacies in the employee's knowledge or use of fire extinguishers or fire prevention procedures.

Training Documentation

- All training will be documented and each employee's understanding will be subject to a "hands-on" test.
- Documentation will consist of; as a minimum, the employee's name, the trainer's name, the date of the training, and an outline of training provided.

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GAS HAZARDS				Revision No.	0
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Purpose

It is the intention of EnviroSmart to provide gas hazards training and detection equipment that meets or exceeds all federal standards. This program is associated with our Respiratory Protection Program.

Scope

This program applies to all COMPANY projects and operations.

This program supplements the COMPANY Respiratory Protection Program that is in place in accordance with 29CFR 1910.134.

Procedure

Gas Hazards Equipment

- Each employee shall use a portable gas monitor as required in all high gas or potentially high hazard areas.
- The gas monitor must be calibrated prior to use per manufacturer's recommendations and contain a current calibration sticker on the monitor providing the date of last calibration.
- Bump test are required to be completed at the beginning of each day the monitor is in use per the requesting Owner Client and manufacturer's guidelines to insure the monitor is functioning correctly.

Owner Client Contingency Plans Awareness

- COMPANY shall insure all employees are aware of the Owner Client's contingency plan provisions including evacuation routes and alarms. COMPANY employees shall participate in emergency evacuation drills and practice rescue procedures.


Use, Maintenance and Care of Gas Monitors

- Only utilize monitors issued by either COMPANY or made available by the Owner Client - no personal monitors are allowed.
- Have the gas monitor on the outside of all clothing.
- Check the calibration date prior to bump testing. If the calibration date is expired turn the unit in immediately and do not use.
- Bump test each shift prior to using the monitor.
- Monitors are sensitive equipment - avoid physical damage and immediately report any monitor that does not appear to be performing as expected.

Training


All affected employees will receive gas hazards awareness training before their initial assignment and annually thereafter. This shall be in conjunction with the COMPANY Respiratory Protection training. Training shall address, as a minimum:

- Locations of alarm stations

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- Gas Monitoring Equipment- Portable and Fixed Detection
- Gas Alarms
- Gas Hazards - Characteristics of gases, to include oxygen deficiency, oxygen or nitrogen enrichment, carbon monoxide and hydrogen sulfide
- Any plant or department specific gases of concern
- Signs and symptoms of overexposure
- Personnel Rescue Procedures
- Use and care of Self-Contained Breathing Apparatus (SCBA) - includes donning and emergency procedures (if applicable)
- Evacuation Procedures
- Staging Areas – Primary and Secondary

Gas Hazard Awareness training shall be documented and available for review.

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GENERAL SAFETY – HEALTH PROVISION				Revision No.	0
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Purpose

This program is written to be in compliance with local regulatory requirements and provide directives to managers, supervisors, and employees about their responsibilities in the operations and management of COMPANY facilities as related to the indicated general safety requirements that apply.

This program applies to all employees of COMPANY, temporary employees and any contractors working for COMPANY. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers COMPANY employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Key Responsibilities

COMPANY Safety Manager

- The designated Safety Manager is responsible for developing and maintaining the General Safety Requirements program. These procedures are kept in the designated safety manager's office.

Site Manager

- Responsible for the implementation and maintenance of the plan for their site and ensuring all assets are made available for compliance with the plan.

Employees


- All shall be familiar with this procedure and the local workplace General Safety Requirements program.
- Follow all requirements, report unsafe conditions, and follow all posted requirements.
- Shall use the safeguards, safety appliances and personal protective equipment while following all safe work practices and procedures for the workplace.

Competency and Training

Workers shall be competent to operate equipment and perform job tasks. A competent worker means adequately qualified, suitably trained and with sufficient experience to safely perform work without supervision or with only a minimal degree of supervision. Work that may endanger a worker must be completed by a worker who is competent to do the work or by a worker who is working under the direct supervision of a worker who is competent to do the work. All workers must be trained in procedures until they are competent. COMPANY shall permit only qualified by training or experience workers to operate equipment and machinery.

Training must include: procedures to be taken in the event of a fire or other emergency, the location of first aid facilities, identification of prohibited or restricted areas, precautions to be taken for the protection of the worker from physical, chemical or biological hazards, any procedures, plans, policies and programs that COMPANY is required to develop and any other matters that are necessary to ensure the health and safety of the worker while the worker is at work.

COMPANY shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.

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Inspections

COMPANY shall ensure that frequent and regular inspections of the workplace, jobsites, materials, equipment and of work processes and procedures by a competent person to identify any risk to the safety or health of any person at the workplace.

COMPANY shall ensure that every dangerous occurrence is investigated as soon as is reasonably possible.

COMPANY must ensure that if a risk is identified we will correct any unsafe condition as soon as is reasonably practicable and, in the interim, take immediate steps to protect the safety and health of any person who may be at risk.

General Facility Requirements

Housekeeping

Each work site shall be kept clean and free from materials or equipment that could cause workers to slip or trip. A floor or other surface used by any worker shall be kept free of obstructions, hazards and accumulations of refuse, snow or ice.

COMPANY requires that a worksite is sanitary and kept as clean as is reasonably practicable.

A reasonable supply of potable drinking water shall be kept readily accessible at a project for the use of workers.

Safe Equipment Maintenance

COMPANY has a duty to ensure our work site maintenance, systems of work and working environments ensure, as far as is reasonably practicable, the health, safety and welfare at work of the our workers.


We must and shall ensure that all equipment is maintained at intervals that are sufficient to ensure the safe functioning of the equipment. All equipment is to be maintained, safe to perform, adequate strength for its purpose and free from obvious defects. Damaged and faulty equipment reporting procedures must be in place.

Where a defect is found in equipment COMPANY will ensure that steps are taken immediately to protect the health and safety of any worker who may be at risk until the defect is corrected and the defect is corrected by a competent person as soon as is reasonably practicable.

Any machinery, tool, material, or equipment which is not in compliance with any applicable OSHA requirement is prohibited. The machine, tool, material or equipment shall either be identified as unsafe by tagging or locking the controls to render them inoperable or shall be physically removed from its place of operation.

Any worker who knows or has reason to believe that equipment under the workers control is not in a safe condition shall immediately report the condition of the equipment to COMPANY and repair the equipment if the worker is authorized and competent to do so.

COMPANY prohibits and will not require or permit compressed air to be directed towards a worker for the purpose of cleaning clothing or personal protective equipment used by that worker, or for any other purpose if the use of compressed air may cause dispersion into the air of contaminants that may be harmful to workers.

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Whenever workers are present at a worksite COMPANY will provide lighting that is sufficient to protect the health and safety of workers and suitable for the work to be done at the worksite.

No worker is allowed to smoke in an enclosed place of employment, worksite or work-related area except in an area designated for smoking.

Impairment

No person shall enter or remain at any workplace of employment while the person's behavior or ability to work is affected by alcohol, intoxicating beverages, drugs or other substance so as to so as to create a nuisance or if his or her abilities are impaired so as to endanger any person, or to create an undue risk to workers, endanger the person or anyone else.

Improper Conduct

All workers shall engage in proper activity or behavior. Improper behavior that might create or constitute a hazard to any person is not acceptable. Improper activity or behavior includes horseplay, scuffling, fighting, practical jokes, and unnecessary running or jumping.

Industrial Hygiene

Where a worker is exposed to a potential hazard of injury to the eye due to contact with a biological or chemical substance, an eyewash fountain shall be provided.

A worker who may be exposed to a biological, chemical or physical agent that may endanger the worker's safety or health shall be trained to use the precautions and procedures to be followed in the handling, use and storage of the agent, in the proper use and care of required personal protective equipment, and in the proper use of emergency measures and procedures.


No food, drink or tobacco shall be taken into, left or consumed in any room, area or place where any substance that is poisonous by ingestion is exposed.

Protective clothing or other safety device that has been worn next to the skin shall be cleaned and disinfected prior to being worn by another worker.

Workers who handle or use corrosive, poisonous or other substances likely to endanger their health shall be provided with washing facilities with clean water, soap and individual towels.

Thermal Stress

A worker must not be exposed to levels that exceed those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH Standard. Clothing corrections must be applied in accordance with the heat stress and strain section of the ACGIH Standard.

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If a worker is or may be exposed COMPANY must conduct a heat stress assessment to determine the potential for hazardous exposure of workers, using measures and methods that are acceptable to the local provincial or territorial agency and develop and implement a heat stress exposure control plan.

If a worker is or may be exposed COMPANY must implement engineering controls to reduce the exposure of workers to levels below those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH Standard. If the above action is not practicable, the employer must reduce the exposure of workers to levels below those listed in the screening criteria for heat stress exposure in the heat stress and strain section of the ACGIH Standard by providing; administrative controls, including a work-rest cycle, or personal protective equipment, if the equipment provides protection equally effective as administrative controls.

If a worker is or may be exposed, the employer must provide and maintain an adequate supply of cool potable water close to the work area for the use of a heat exposed worker.

If a worker shows signs or reports symptoms of heat stress or strain, the worker must be removed from the hot environment and treated by an appropriate first aid attendant, if available, or by a physician.


If a worker is or may be exposed to the conditions specified below COMPANY the employer must conduct a cold stress assessment to determine the potential for hazardous exposure of workers, using measures and methods that are acceptable and develop and implement a cold exposure control plan.

- Thermal conditions that could cause cold stress or injury,
- Thermal conditions that could cause a worker's core body temperature to fall below 36°C (96.8°F), or
- Thermal conditions that are below the levels classified as "little danger" to workers in the criteria for the cooling power of wind on exposed flesh in the cold stress section of the ACGIH Standard.

If a worker is or may be exposed COMPANY must implement effective engineering controls to reduce the exposure hazard to levels above those classified as "little danger" to workers in the criteria for the cooling power of wind on exposed flesh in the cold stress section of the ACGIH Standard. If the above action is not practicable COMPANY must reduce the exposure hazard by providing effective administrative controls or personal protective equipment if the equipment provides protection equally effective as administrative controls.

A worker who is or may be exposed must wear adequate insulating clothing and personal protective equipment. If work takes place outdoors in snow or ice covered terrain where excessive ultraviolet light, glare or blowing ice crystals present a risk of injury to the eyes workers must wear eye protection appropriate to the hazards.

If a worker exposed to cold shows signs or reports symptoms of cold stress or injury the worker must be removed from further exposure and treated by an appropriate first aid attendant, if available, or a physician.

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Purpose

The purpose of this program is to ensure that the hazards of all chemicals and substances are evaluated and the information concerning their hazards is communicated to employees, including emergency response organizations, state and federal agencies, other employers and contractors, as necessary. This hazard information will be communicated, and displayed in accordance with this Hazard Communication Program.

COMPANY is firmly committed to providing each of its employees a safe and healthy work environment. It is recognized that workers may use chemicals or substances that have potentially hazardous properties. When using these substances, workers must be aware of the identity, toxicity or hazardous properties of a chemical or substance, since an informed employee is more likely to be a safe employee. To this end, COMPANY has established a written Hazard Communication Program.

Scope

This program is applicable to all COMPANY employees who may be exposed to hazardous chemicals. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers COMPANY employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Definitions

Chemical - any element, chemical compound, or mixture of elements and/or compounds.

Chemical Inventory List - a list of chemicals used at this facility, or by personnel that report to this facility.

Electronic Access – using electronic media (telephone, fax, internet, etc.) to obtain Material Safety Data Sheets or health information.

Facility - an establishment at one geographical location containing one or more work areas.


Hazardous chemical - any chemical that is a physical hazard, a health hazard, or has a Permissible Exposure Limit established for it.

Hazardous substance - see hazardous chemical.

Hazard Communication Program Coordinator - the person who has overall responsibility at a facility for that facility's Hazard Communication Program.

Health hazard - a substance for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic adverse health effects may occur in exposed employees.

IDLH - immediately dangerous to life and health.

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Immediate Use - the chemical will be under the control of and used only by the person who transfers it from a labeled container and only within the work shift in which it is transferred.

Jobsite - an area remote from a COMPANY facility where hazardous chemicals are stored or used and employees are present for the purpose of COMPANY business.

(MSDS) Material Safety Data Sheet - a written or printed document containing chemical hazard and safe handling information, prepared in accordance with the OSHA Occupational Safety & Health Standards, Section 1910.1200, paragraph (g).

(NFPA) National Fire Protection Association Labeling - a common industry labeling method developed by the National Fire Protection Association to identify the hazards associated with a particular chemical.

(PEL) Permissible Exposure Limit - the maximum eight-hour time weighted average of any airborne contaminant to which an employee may be exposed.

Readily available - when an employee has access during the course of his/her normal work shift.

Substance - see Chemical.

(TLV) Threshold Limit Value - the airborne concentration of a substance that represents conditions under which it is believed that nearly all normal workers may be repeatedly exposed day after day without adverse effect.

Work area - a room or defined space in a facility where hazardous chemicals are stored or used and where one or more employees are present.

Workplace - see Facility.

Workplace Chemical List - see Facility Chemical List.


Responsibilities

A written hazard communication program shall be developed, implemented and maintained at each COMPANY workplace that describes how labels and other forms of warning, material safety data sheets and employee information will be met.

The Safety Manager is responsible for developing and implementing the Hazard Communications Program. Managers are responsible for maintaining Material Safety Data Sheets and the Chemical Inventory List for their locations. The Safety Manager reviews the MSDS files and Chemical Inventory List at each location at least annually to ensure that they are complete and up to date.

Employees are responsible for following the requirements in the Hazard Communication Program, to use proper personal protective equipment, to report containers without labels immediately and to not deface any label.

Any employee who transfers any material from one container to another is responsible for labeling the new container with all required information.

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All employees are responsible for learning the requirements of this section and for applying them to their daily work routine.

Requirements

Introduction

This Hazard Communication Program was prepared for use by COMPANY to explain how COMPANY meets the requirements of the federal Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200). It spells out how COMPANY will inventory chemicals stored and used, obtain and use material safety data sheets, maintain labels on chemical substances, and train employees about the hazards of chemicals they are likely to encounter on the job.

Preparation of this program indicates our continuing commitment to safety among our employees in all of our locations.

- Each facility is expected to follow this program and maintain its work areas in accordance with these requirements.
- Employees, their designated representatives, and government officials must be provided copies of this program upon request.
- In addition to the program, other information required as part of our hazard communication effort is available to workers upon request.
- Asking to see this information is an employee's right.
- Using this information is part of our shared commitment to a safe, healthy workplace.

List of Hazardous Chemicals

COMPANY maintains a listing of all known hazardous chemicals known to be present or used at each job site by using the identity that is referenced on the appropriate material safety data sheet (MSDS). This identity is often a common name, such as the product or trade name (i.e., Lime-A-Way).


The Chemical Inventory List is updated as necessary and at least annually by the Hazard Communication Program Coordinator or their designee.

The facility Chemical Inventory List must be available for review upon request.

Material Safety Data Sheets

Chemical manufacturers are responsible for developing MSDSs. COMPANY shall have a MSDS for each chemical used with the exception of consumer products. MSDSs must be obtained for each required chemical from the chemical manufacturer, supplier or vendor. The purchasing of any potentially hazardous chemical products from any supplier that does not provide an appropriate Material Safety Data Sheet in a timely fashion is prohibited.

MSDSs shall be maintained and readily accessible in each work area. MSDSs can be maintained at the primary work site. However, they should be available in case of an emergency. MSDSs must be made available, upon request, to employees, their designated representatives, the Assistant Secretary of Labor and the Director of OSHA.

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Material Safety Data Sheets are filed alphabetically, by material classification, in the MSDS Book. A Chemical Inventory List is provided in the front of the MSDS Book, listing all MSDS' contained therein. This inventory serves as the index of the MSDS Book. The MSDS Book shall be displayed in a prominent location in the work area where it is accessible to all employees.

A copy of a MSDS request form is located in the first section of the MSDS Book. An employee may use a copy of this form to request an MSDS or he may ask the Manager for one. In either case the requested MSDS must be given to the employee within 24 hours.

The Material Safety Data Sheet must be kept in the MSDS library for as long as the chemical is used by the facility.

Electronic access (telephone, fax, internet, etc.) may be used to acquire and maintain MSDS libraries and archives.

The Manager is responsible for seeing that the Chemical Inventory List inventory is maintained, is current and is complete. He will review the inventory and the MSDS Book at least annually. When a hazardous material has been permanently removed from the work place, its MSDS is to be removed from the MSDS Book and the Chemical Inventory List. A file copy is to be maintained in a "dead file".

MSDS' for hazardous materials to which COMPANY employees have been exposed must be maintained after the employee leaves the employment of COMPANY.

Before any non-routine task is performed, employees will be advised of methods and special precautions, PPE and the hazards associated with chemicals and the hazards associated with chemicals contained in unlabeled pipes in their work areas. In the unlikely event that such tasks are required, the Manager will provide MSDS for involved chemical.

Employees have the right to request MSDS on any chemical and it must be provided without any issues.


Labels, Labeling and Warnings:

The Manager will ensure that all hazardous chemicals used or stored in the facility are properly labeled.

- Damaged labels or labels with incomplete information shall be reported immediately.
- Damaged labels on incoming containers of chemicals shall not be removed.
- New labels shall be provided as needed so that all containers are properly labeled.
- Only containers into which an employee transfers a chemical for their own immediate use will not require labeling.
- Employees who are unsure of the contents of any container, vessel or piping must contact their supervisor for information regarding the substance including:
 - The name of the substance
 - The hazards related to the substance
 - The safety precautions required for working with the substance.

Labels, tags or markings on containers shall list as a minimum:

- Identity of hazardous chemical.

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- Name and address of the chemical manufacturer, importer or other responsible party.
- Words, pictures, symbols or combinations thereof may be used.
- The trade name of the product as listed on the Material Safety Data Sheet.
- Appropriate hazard warnings to help employees protect themselves from the hazards of the substance.
- Labels shall be legible, in English. However, for non-English speaking employees, information shall be presented in their language as well.
- COMPANY or employees shall not remove or deface labels on incoming containers of hazardous chemicals.

All containers must be labeled. When an employee transfers the contents of one container to another, he must label the new container with all required information. This information can be obtained from the labeling of the original container or from the material's MSDS. Any container of a potentially hazardous material that will not be emptied during one shift must be labeled, without exception.

Personnel in the Shipping and Receiving Departments are responsible for proper labeling of all containers shipped by COMPANY and for the inspection of all incoming materials to ensure correct labeling. Chemicals received from vendors that are not properly labeled must be rejected.

NFPA Standard 704 labels shall be the preferred hazard identification method used in COMPANY facilities and on materials containers used on client sites. All employees, clients, subcontractors and visitors who may come in contact with a COMPANY hazardous substance must be briefed to ensure understanding of the NFPA 704 labeling system.

Training


Employees shall be provided with effective information and training on hazardous chemicals in their work area at the time of their initial assignment, and whenever a new physical or health hazard the employees have not previously been trained about is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., flammability, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.

Additional training will be provided whenever a new chemical hazard is introduced into the work area. To reinforce the importance of handling chemicals properly when performing new or non-routine tasks supervisors will conduct supplementary training as needed.

Formal training will be conducted by facility employees or individuals who are knowledgeable in the Hazard Communication program.

The Manager shall ensure records of employee training are maintained.

When an outside contractor, such as a pest control worker or a carpenter enters a COMPANY site to perform a service for the company, he must first present MSDS' for any and all hazardous chemicals he will use. These MSDS' will be treated as above with the same training requirements. The Manager will be responsible for contacting each contractor before work is started to gather and disseminate any information concerning chemical hazards the contractor is bringing into the work place.

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The Hazard Communication Program documented training shall, as a minimum, include:

- Requirements, details and rights of the employee as contained in the Hazard Communication regulation
- Operations and work areas where hazardous chemicals are present.
- Location of the written Hazard Communication Program, MSDSs and the Chemical Inventory List.
- How to access MSDS' or MSDS information.
- How to read and an explanation of labels and Material Safety Data Sheets for pertinent hazard information and how employees can obtain and use the appropriate hazard information.
- Methods and observations that may be used to detect the presence or release of hazardous chemicals by use of monitoring devices, visual appearance or odor.
- The physical & health hazards of chemicals in the work area.
- Protection measures to be utilized to prevent exposure.
- Appropriate work practices.
- Emergency procedures.
- Proper PPE to be used.

Multi-Employer Job Sites/Multi-Work Site

Multi-Work Sites

Where employees must travel between work places during a work shift, the written HAZCOM Program shall be kept at a primary job site. If there is no primary job site, then the program shall be sent with employees.

The program shall be made available, upon request, to employees, their designated representatives, the Assistant Secretary and the Director in accordance with requirements of 29 CFR 1910.1020(e).


Multi-Employer Job Sites



A pre-job briefing shall be conducted with the contractor prior to the initiation of work on the site.


- During this pre-job briefing, contractors shall notify COMPANY and present current copies of Material Safety Data Sheets and label information for every hazardous substance brought on-site.
- COMPANY shall notify and provide required MSDS and label information for all hazardous materials the contractor may encounter on the job.
- The facilities labeling system and any precautionary measures to be taken by contractor during normal conditions and emergencies shall be addressed.
- By providing such information to other employers, COMPANY does not assume any obligations that other employers have for the safety of their employees.
- In this regard, other employers working on COMPANY property or for COMPANY on client's property remain fully responsible for developing and implementing their own compliant hazard communication programs.

Hazard Warnings / NFPA 704

The NFPA 704 Diamond is a means of disseminating hazard warning and information for a material. The diamond is divided into four sections. Each of the first three colored sections has a number in it associated with a particular hazard. The higher the number is, the more hazardous a material is for that characteristic. The fourth section includes special hazard information. The four sections and an explanation of the numbers in them are provided below:

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 NFPA Rating Explanation Guide 					
RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable	Radioactive symbol	Radioactive
				W	Reacts violently or explosively with water
				W OX	Reacts violently or explosively with water and oxidizing

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Purpose

The purpose of this program is to have effective procedures for reporting and evaluating/investigating incidents and non-conformances in order to prevent further occurrences.

Responsibilities

Responsibilities for incident investigation will be assigned prior to occurrence of an incident. Individual responsibilities for reporting and investigation must be pre-determined and assigned prior to incidents.

COMPANY Safety Manager

- Ensures investigations are conducted and assists in identifying corrective actions.

Site Manager and Supervisors

- Investigates (or assists in) incident investigations
- Corrects non-conformances
- Accompany injured employees to the medical provider for initial treatment.

Employees

- Immediately report any injury, job related illness, spill or damage to any property to their immediate supervisor. If their immediate supervisor is not available the employee is then to immediately notify the project manager. Employees who could be first responders will be trained and qualified in first aid techniques to control the degree of loss during the immediate post-incident phase.

Procedure

After immediate rescue or response, actions to prevent further loss will occur if the scene is safe. For example, maintenance personnel should be summoned to assess integrity of buildings and equipment, engineering personnel to evaluate the need for bracing of structures, and special equipment/response requirements such as safe rendering of hazardous materials or explosives employed.


Investigations of Incidents & Non-conformances

Investigation is an important part of an effective safety program in that it determines the root cause and corrective actions necessary to prevent similar incidents or non-conformances.

The following must be reported to the employee's supervisor immediately. If that person is not available then the COMPANY Safety Manager shall be immediately notified for:

- Near miss incidents with the potential to harm people, the environment or assets
- Work related injuries or illnesses; Property damage including vehicle incidents
- Hazardous chemical spillage, loss of containment and contamination
- Non-conformance to safety or environmental rules, policies or standards

The supervisor shall make the necessary notifications and begin the incident investigation process.

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In the case of a major injury or incident the scene of the event should be closed off and kept "as is" at the time of the incident. This is vital for effective incident investigation.

Incident investigation occurs as soon as possible, while the facts are still fresh within the minds of those involved (i.e. witnesses). Take the opportunity to talk to all of those involved before they become unavailable or memory fades. An incident investigation must be thorough and concerned only with cause and prevention and must be separate from administrative disciplinary action.

Equipment

Proper equipment will be available to assist in conducting an investigation. Equipment may include some or all of the following items; writing equipment such as pens/paper, measurement equipment such as tape measures and rulers, cameras, small tools, audio recorder, PPE, flags, equipment manuals, etc. The Safety Manager shall have an incident investigation kit prepared in advance.

Incident Reporting Matrix

The Incident Reporting Matrix identifies, based on type of incident, who within corporate management shall be verbally notified and when. It also specifies which type of report from the field shall be completed based on the type of incident.


Reporting of the incident must occur in a specified manner based on site specific requirements and the reporting sequence shall be posted.

EXTERNAL INCIDENT NOTIFICATION MATRIX

TYPE OF INCIDENT	WHO TO NOTIFY VERBALLY	WHEN	INCIDENT REPORT FORM
Minor First Aid	Owner Client	24 hrs	Yes
Injury Above Minor First Aid	911 / Site Medical Response / Owner Client	ASAP	Yes
As Required Injury Reporting	OSHA / Owner Client	Within 8 hrs	Yes
Fire / Explosion	911 / Site Fire Response / Owner Client	ASAP	Yes
Reportable Spill	Site Environmental / Owner Client	Within 24 hrs	Yes
Property/Vehicle Damage	Owner Client	Within 24 hrs	Yes

INTERNAL INCIDENT NOTIFICATION MATRIX

TYPE OF INCIDENT	WHO TO NOTIFY VERBALLY	WHEN	INCIDENT REPORT FORM
Minor First Aid	Safety Manager	ASAP	Yes
Injury Above Minor First Aid	Safety Manager	ASAP	Yes
As Required Injury Reporting	President then Safety Manager	ASAP	Yes
Fire / Explosion	Safety Manager	ASAP	Yes
Reportable Spill	Safety Manager	ASAP	Yes
Property/Vehicle Damage	Safety Manager	ASAP	ASAP

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Time Elements for OSHA and Client Notification

Required incidents must be verbally reported to OSHA within 8 hours of their discovery. Incidents must also be reported to the owner client as soon as possible or in a timely manner (within 24 hours of incident).

Incident Review Team and Incident Investigation Report

All incidents will be investigated to the appropriate level with regards to incident severity. While all incidents should be investigated, the extent of such investigation shall reflect the seriousness of the incident utilizing a root cause analysis process or other similar method determined by the COMPANY Safety Manager. They will form an Incident Review Team that participates in the determination of the final root cause investigative incident report. The team consists of representatives of management or other designees as assigned by the COMPANY Safety Manager.

Initial Identification/Assessment of Evidence

Initial identification of evidence immediately following the incident could include a listing of people, equipment, and materials involved and a recording of environmental factors such as weather, illumination, temperature, noise, ventilation, etc.

Collection/Preservation and Security of Evidence

Evidence such as people, positions of equipment, parts, and papers must be preserved, secured and collected through notes, photographs, witness statements, flagging, and impoundment of documents and equipment. All shall be dated.

Witness Interviews and Statements

Witness interviews and statements must be collected. Locating witnesses, ensuring unbiased testimony, obtaining appropriate interview locations, and use of trained interviewers should be detailed. The need for follow-up interviews should also be addressed. All items shall be dated.

The final incident investigation report consists of findings with critical factors, evidence, corrective actions, responsible parties, and timelines for corrective action completion.


Results of incident investigations are communicated to employees via the Incident Notice form.

Preparation of the Written Incident Report

Written incident reports will be prepared and include the Field Incident Report Form and a detailed narrative statement concerning the events. The format of the narrative report may include an introduction, methodology, summary of the incident, Incident Review Team member names, narrative of the event, findings and recommendations. Photographs, witness statements, drawings, etc. should be included.

The supervisor completes the COMPANY Field Incident Report and takes the below steps when beginning an incident investigation.

- Provide emergency assistance, as needed and qualified for
- Secure the area as quickly as possible to retain area in the same condition at the time of the incident

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- Notify management by phone according to the Incident Notification Matrix
- Identify potential witnesses
- Use investigation tools, as needed (camera, drawings, video, etc.)
- Tag out for evidence any equipment that was involved
- Interview witnesses (including the effected employee) and obtain written, signed statements and fax to the COMPANY Safety Manager
- Prepare COMPANY Field Incident Report, sign the form, fax it to the COMPANY Safety Manager
- Implement any immediate corrective actions needed

Incident Notice Form

COMPANY shall provide documentation and communication of lessons learned and review of similar operations to prevent reoccurrence. Lessons learned are reviewed and communicated. Changes to processes must be placed into effect to prevent reoccurrence or similar events.

In order to communicate incident information and lessons learned from incidents the COMPANY Safety Manager shall send the Incident Notice to all work sites. The form shall be posted on employee bulletin boards and shall be discussed in weekly safety meetings until all employees at the job site have been informed of the incident.

Corrective Actions Resulting from Incident Investigations

Incident investigations should result in corrective actions, individuals should be assigned responsibilities relative to the corrective actions, and these actions should be tracked to closure.

Site Managers are held accountable for closing corrective actions. Corrective actions for safety improvement input are posted at each site and tracked by the COMPANY Safety Manager to ensure timely follow up and completion.

Corrective actions are also used as needed for revisions to site specific safety plans and the COMPANY Safety and Health Management System.

Injury Classifications

Injuries shall be classified per the following:


First Aid – Dressing on a minor cut, removal of a splinter, typically treatment for household type injuries.

Lost Work Day Case (LWDC) – An injury that results in an employee being unfit to perform any work on any day after the occurrence of an occupational injury.

Number of Lost or Restricted Work Days – The number of days, other than the day of occupational injury and the day of return, missed from scheduled work due to being unfit for work or medically restricted to the point that the essential functions of a position cannot be worked.

Occupational Injury – An injury which results from a work related activity.

Occupational Illness – Any abnormal condition or disorder caused by exposure to environmental factors while performing work that resulted in medical treatment by a physician for a skin disorder, respiratory condition,

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poisoning, hearing loss or other disease (frostbite, heatstroke, sunstroke, welding flash, diseases caused by parasites, etc.). Do not include minor treatments (first aid) for illnesses.

Recordable Medical Case (RMC) – An occupational injury more severe than first aid that requires advanced treatment (such as fractures, more than one stitch, prescription medication of more than one dose, unconsciousness, removal of foreign body embedded in eye (not flushing), admission to a hospital for more than observation purposes) and yet results in no lost work time beyond the day of injury.

Restricted Work Day Case (RWDC) – An occupational injury which results in a person being unfit for essential functions of the regular job on any day after the injury but where there is no time lost beyond the day of injury. An example would include an injured associate is kept at work but not performing within the essential functions of their regular job.

Work or Work Related Activity – All incidents that occur in work related activities during work hours, field visits, etc. are reportable and are to be included if the occupational injury or illness is more serious than requiring simple first aid. Incidents occurring during off hours and incidents while in transit to or from locations that are not considered an employee's primary work are not reportable.


The following are examples of incidents that will not be considered as recordable:

- The injury or illness involves signs or symptoms that surface at work but result solely from a non-work-related event or exposure that occurs outside the work environment.
- The injury or illness results solely from voluntary participation in a wellness program or in flu shot, exercise class, racquetball, or baseball.
- The injury or illness is solely the result of an employee eating, drinking, or preparing food or drink for personal consumption (whether bought on the employer's premises or brought in). The injury or illness is solely the result of an employee doing personal tasks (unrelated to their employment) at the establishment outside of the employee's assigned working hours.
- The illness is the common cold or flu (Note: contagious diseases such as tuberculosis, brucellosis, hepatitis A, or plague are considered work-related if the employee is infected at work).


Training

COMPANY shall train personnel in their responsibilities and incident investigation techniques. Personnel must be trained in their roles and responsibilities for incident response and incident investigation techniques. Training requirements relative to incident investigation and reporting are described below:

- Training frequency will be based on the specific are of responsibility but shall not exceed once every two years.
- Training requirements relative to incident investigation and reporting shall include:
 - Awareness
 - First Responder Responsibilities
 - The Initial Investigation at the Accident Scene
 - Managing the Accident Investigation
 - Collecting Data
 - Analyzing Data

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- Developing Conclusions and Judgments of Need
- Reporting the Results


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FIELD INCIDENT REPORT FORM

The Employee's Immediate Supervisor is to fill this form out then route it to the Safety Manager. Attach employee's and any witnesses written, signed statement.

If a major injury is involved freeze the scene (equipment, paperwork, etc.) and prevent injury location from being disturbed until advised by the Safety Manager.

<input type="checkbox"/> Job Related Illness	<input type="checkbox"/> Job Related Injury	<input type="checkbox"/> Near Miss	Property Damage ____ <Than \$500 Damage ____ >Than \$500 Damage
Date & Time of Incident: ____	When/Who Within Mgmt Was Notified? ____		Supervisor Name: ____
Location of Incident: ____	Date & Time Employee Reported to Supervisor: ____		Time/Date of Treatment: ____
Employee Name: ____		Position: ____	Experience In Position: ____
Treatment: ____None ____First Aid ____Clinic ____Hospital			Copy of Treatment Record Attached? Yes No
Was this incident the result of violating a safety rule or procedure? Yes ____ No ____			
Describe Body Injury or Job Illness or Property Damage: <input type="checkbox"/> Form allows for space to be added			
Classification: ____First Aid ____Medical Recordable ____Work Restrictions ____Lost Time			
How Did the Incident Happen (Completed by First Line Supervisor)? What exactly happened? What was the employee doing? If there was an injury, describe it. Give as many details as possible and use additional paper if needed. <input type="checkbox"/> Form allows for space to be added			
Casual Factors Involved (Completed by First Line Supervisor): Describe the events and conditions that contributed to the incident. Include information about the equipment, workers, environment and other factors that will assist in the investigation. <input type="checkbox"/> Form allows for space to be added			
Supervisors Suggested Improvements to Prevent a Future Occurrence: <input type="checkbox"/> Form allows for space to be added			
First Line Supervisor's Name	First Line Supervisors Signature	Date	
Project Manager Comments	<input type="checkbox"/> Form allows for space to be added		
Safety Manager Comments	<input type="checkbox"/> Form allows for space to be added		
Senior Management Comments	<input type="checkbox"/> Form allows for space to be added		

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INCIDENT NOTICE

This notice is to be posted on all bulletin boards and documented in safety meetings and toolboxes at all locations until all staff are aware of the contents

Vehicle Property Damage

Date: XX-XX-XXXX

WHAT HAPPENED?

Provide just a one line factual statement...no names! Example:

A worker damaged a company vehicle by striking a concrete block while making a right turn on a road between buildings.

INSERT PHOTO

INSERT PHOTO

HOW DID IT HAPPEN?

Provide a concise determination...make the message clear! Example:

The main cause of this incident was the unsafe employee behavior by choosing not to pay attention to objects in the area while driving.


WHAT DO WE DO NOW TO PREVENT THIS FROM HAPPENING AGAIN?

Insert your corrective actions....again no names. Example:

All drivers must:

- Continually assess road conditions and hazards and be prepared for any challenge that may approach them.
- Slow down around construction, large vehicles, emergency vehicles, wildlife, congested work areas, fog, rain or anything else that adds a hazard to your driving.

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	EnviroSmart Safety Management System		Doc No:	LEADAW
			Initial Issue Date	2/5/13
			Revision Date:	Initial Version
LEAD AWARENESS			Revision No.	0
			Next Review Date:	2/5/14
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Purpose

The purpose of this procedure is to advise employees in areas where lead is suspected on an awareness level basis about the properties and dangers of lead, general guidelines and training requirements. For more information refer to the Lead safety procedure for EnviroSmart.

Scope

This procedure applies to EnviroSmart operations where employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. When work is performed on a non-owned or operated site, the operator's program shall take precedence, however, this document covers EnviroSmart employees and contractors and shall be used on owned premises, or when an operator's program doesn't exist or is less stringent.

Responsibilities

Managers and Supervisors

- In coordination with the Safety Manager, develop and implement annual lead awareness training.
- Ensure personnel are aware of work that has the potential of exposure to lead.
- Identify possible locations where lead in the workplace may be found.
- Inform the Safety Manager of upcoming work involving known or suspected lead-containing materials, allowing the Safety Manager to provide any necessary monitoring or other required actions.
- Ensure employees comply with the lead awareness requirements.

Safety Manager:

- Coordinate annual lead awareness training activities.


Employees:

- Comply with the lead awareness requirements and direct any questions or concerns to the Safety Manager.
- Attend required annual training.
- Review material safety data sheets or consult with the supervisor to identify any container with lead-containing material.

Procedure

Health Effects of Lead

Common symptoms of acute lead poisoning are loss of appetite, nausea, vomiting, stomach cramps, constipation, difficulty in sleeping, fatigue, moodiness, headache, joint or muscle aches, and anemia. Long term (chronic) overexposure to lead may result in severe damage to the blood-forming, nervous, urinary, and reproductive systems.

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Locations

Each worksite shall create a list of possible locations of lead containing materials such as leaded paints, leaded solders, pipes, batteries, circuit boards, cathode ray tubes, leaded glass, and demolition/salvage materials.

The list is to be provided to the Safety Manager on a quarterly basis and revised as lead containing materials are added or eliminated from the previous list.

General Requirements

Employees must abide by any signs/labels/assessment reports indicating the presence of lead containing materials and will not disturb the lead containing material. Appropriate work practices shall be followed to ensure the lead containing materials are not disturbed. Regulated access signs are to demarcate the lead exposure regulated work areas. The signs should read as follows:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

General Work Practices

When working on multi-contractor worksites EnviroSmart employees shall be protected from exposure. If employees working immediately adjacent to a lead abatement activity are exposed to lead due to the inadequate containment of such job, EnviroSmart shall either remove the employees from the area until the enclosure breach is repaired or perform an initial exposure assessment.

Employees will wash hands and face if lead materials are contacted. Employees' hands and faces shall be washed if lead containing materials are contacted. Any possible contact with lead containing material must be reported immediately to the supervisor or Safety Manager.

If air is re-circulated back into the workplace, the system must be equipped with a HEPA (high efficiency particulate air) and backup filter, and a system to monitor the lead level will be installed.


When using mechanical means to remove lead-containing paints or coatings, use equipment which is equipped with a HEPA collection system.

Whenever possible, use a wet system to reduce airborne dust.

Whenever possible, substitute lead material with non-leaded material.

Respirators shall be used during the time period required to install or implement control if engineering and work practices are insufficient as well as for emergency use.

If respirators are required, they will be NIOSH certified and all employees will follow the EnviroSmart Respiratory Protection Program.

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Training


Lead awareness training is required at time of hire, during orientation or before initial assignment in areas where lead is suspected and annual refresher training is conducted. Lead awareness training is required for employees whose work activities may contact lead containing materials but do not disturb the material during their work activities. Lead awareness training is required at time of hire, during orientation, or before assignment to areas containing lead.

Refresher training must be given annually.

Documentation of training - Lead awareness training shall be documented including dates of training, location of training, employee name and trainer name.

Training will include the health effects of lead, how to report suspected locations of lead containing material and not to disturb any possible lead containing material.

Training records shall be provided upon request all materials relating to the employee information and training program to regulatory agencies.

	EnviroSmart Safety Management System			Doc No:	SWA
				Initial Issue Date	2/1/2013
				Revision Date:	Initial Version
STOP WORK AUTHORITY				Revision No.	0
				Next Review Date:	2/1/2014
Preparation: Safety Mgr	Authority: President	Issuing Dept: Safety		Page:	Page 1 of 2

Purpose

The Stop Work Authority process involves a stop, notify, correct and resume approach for the resolution of a perceived unsafe condition, act, error, omission or lack of understanding that could result in an undesirable event. All COMPANY employees have the authority and obligation to stop any task or operation where concerns or questions regarding the control of health, safety or environmental risks exist.

Scope

This program applies to all COMPANY projects and operations.

Key Responsibilities

- Employees are responsible to initiate a Stop Work Intervention when warranted and management is responsible to create a culture where SWA is exercised freely.
- Supervisors are responsible to ensure a culture is created where SWA is exercised and honored freely to resolve issues before operations resume and recognize proactive participation.
- Management must establish and support clear expectations to exercise SWA, create a culture where SWA is exercised freely and hold those accountable that chose not to comply with established SWA policies.

Stop Work Authority Procedure


- When an unsafe condition is identified the Stop Work Intervention will be initiated, coordinated through the supervisor, initiated in a positive manner, notify all affected personnel and supervision of the stop work issue, correct the issue and resume work when safe to do so.
- No work will resume until all stop work issues and concerns have been adequately addressed.
- Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated by the host nor by COMPANY.

Follow-Up

- All Stop Work Interventions shall be documented for lessons learned and corrective measures to be put into place.
- Stop Work reports shall be reviewed by supervision order to measure participation, determine quality of interventions and follow-up, trend common issues, identify opportunities for improvement, and facilitate sharing of learning.
- It is the desired outcome of any Stop Work Intervention that the identified safety concern(s) have been addressed to the satisfaction of all involved persons prior to the resumption of work. Most issues can be adequately resolved in a timely manner at the job site, occasionally additional investigation and corrective actions may be required to identify and address root causes.

Training

Employees shall receive Stop Work Authority training before their initial assignment. The training will be documented including the employee name, the dates of training and subject matter.

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STOP WORK FORM

Section 1: Stop Work Issuance			
Location of operation		Date & Time	
Supervisor		Phone	
Person initiating stop work			
Person performing work			
Work operation or condition (include names of individuals performing work)			
Hazard (as stated by person initiating stop work)			

Section 2: Date / Time Informed			
Supervisor		Safety Manager	
Area Manager		Client Safety (If required)	

Section 3: Follow-up Action (Be specific – what by, who by, when by to correct hazard)			

Section 4: Restart Concurrence			
Supervisor		Date	
Area Manager		Date	
Safety Manager		Date	



ATTACHMENT E

MATERIAL SAFETY DATA SHEETS

NONE PROVIDED AS OF FEBRUARY 1, 2013

Attachment 3
EnviroSmart Report dated 1 May 2013



**Technical Report and Inventory List
Laboratory Waste Chemicals and Equipment Inspection Building 13 -
Charleston Naval Complex, North Charleston, SC**

Prepared By: EnviroSmart Inc.
Specifications: Resolution Consultants
SOW Number: 0888812793

P.O. BOX 20666, Charleston, SC 29413
Phone: (843) 722-0062 Fax: (843) 722-0082



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- 2. Description of Facility**
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- 3. Decontamination of Equipment**
- 4. Transportation and Disposal of Waste**
- 5. Qualifications for Future Work**
 - a. Safe Working Conditions
 - b. Equipment Decontamination / Removal

ATTACHMENTS

- A. Table of Laboratory Waste with location**
- B. Table of Laboratory Equipment with location**
- C. Photographs**



1. Summary of SOW

The service to be provided under this SOW is limited to a visual chemical inspection and inventory of contaminated laboratory equipment and laboratory waste located within Building 13 at the Resolution Consultants project site at Charleston Naval Complex (CNC) in North Charleston, South Carolina.

a. Overview of Laboratory Waste

As a former working laboratory not many chemicals/waste were found upon inspection of all the rooms in Building 13. Most of the waste from the laboratories had been removed from the building prior to our inspection on March 26, 2013. A complete inventory of the chemicals and their current location as of the date of the inspection can be found in Attachment A.

b. Overview of Laboratory Equipment

The former laboratory building contained numerous equipment used in conjuncture with the testing completed at the facility. This equipment varied in size from small handheld equipment to large, heavy pieces of equipment that will require to be handled by load bearing equipment in order to be removed from the site. Most of the equipment in the facility does not seem to need a high-level decontamination process prior to disposal. Some of this equipment may have some high value for the metals (i.e., copper, aluminum, etc.) that is part of the working electronics in the equipment and could possibly be reclaimed to offset disposal costs. A complete inventory of the equipment and their current location as of the date of the inspection can be found in Attachment B.

c. Overview of Facility

The building has a significant amount of deterioration in the floors and ceilings due to leaks in the building for an extended amount of time. In some cases the walls have deteriorated to the point of holes forming in these surfaces. Also, when the heavy lab equipment was originally placed in the building it is assumed the elevators were used to get the equipment to the upper floors. Currently, the elevators are not in working order. The deterioration of the building, weight of the lab equipment and load bearing equipment needed for removal, and lack of working elevators could cause problems in the cleanup and removal of the equipment from the property. This and other safety conditions need to be addressed before removal can begin.

2. Description of Facility

Building 13, the project facility, located at the intersection of A Avenue South and Pipefitter Street in North Charleston, SC is a three (3) story brick structure. The facility has been left vacant for a number of years and is in a state of disrepair, due to neglect. A structural report has been completed and shows numerous problems with the floors. Also, Asbestos tiles, flooring and piping insulation may be present and a study needs to be done to evaluate this possibility. The building needs to be have the various missing and open widows covered and the building closed up to reduce the continued deterioration and disrepair.



a. Description/ Amount Of Laboratory Waste

The waste found in Building 13 during the visual inspection performed by EnviroSmart's Chemist and technical assessment team on Tuesday March 26, 2013 is catalogued in the attached table. The table has the following information about the chemicals/waste found if available:

Chemical or Common Name
Manufacturer
Physical State
Quantity
Size
Container Type
Amount in container
Building Room # located

b. Description of Laboratory Equipment

The laboratory equipment found in Building 13 during the visual inspection performed by EnviroSmart's Chemist and technical assessment team on Tuesday March 26, 2013 is catalogued in the attached table. The table has the following information about the laboratory equipment found if available:

Room Number
Equipment Type/Description
Manufacturer
Serial Number
Size/Type
Quantity
Contamination

3. Decontamination of Equipment

The only equipment that needs to be decontaminated before removal/handling are the various fume hoods located throughout the building. These hoods could have been used for perchloric acid digestion of metals for Atomic Absorption Spectroscopy. This is not likely but is a possibility that has to be considered for safety reasons and because no information was provided as to the type of testing performed by the Navy when the laboratory was operational.

4. Transportation and Disposal of Waste

Most of the limited amount of waste found left in the building is non-hazardous in nature and can be handled as special waste and sent to a sub-title D special waste landfill. There is a small amount of waste that will have to be handled as hazardous waste. They are found in a couple of waste groups, they are flammable, combustibles, flammable paints, and pesticides.



5. Qualifications for Future Work

The future work to be completed at the site of removing the waste and laboratory equipment, needs to have considerations of safety completed before commencing these tasks. These actions would be to have an Asbestos survey completed and also possibly checked for Black Mold and other biological concerns (pigeon droppings). These factors need to be considered before any workers are placed inside the building for removal and or demolition activities.

a. Safe Working Conditions

The conditions at the site based on visual inspection and the structural report, indicate problems with holes and weak spots in the floors. The floors also have much debris and fallen tiles that cause slip, trip, and fall hazards throughout the building. These will need to be addressed before the heavy laboratory equipment could be removed from the facility. Also the building needs to have the open windows and other building openings sealed to stop the access for animals and weather into the building. The possibility of Asbestos Containing Materials (ACM) being present at the facility needs to be addressed. Mold could also be a consideration for workers doing removal activities. Also rust and degradation of some of the metal equipment has caused a safety work hazard for snags and cuts.

b. Equipment Decontamination / Removal

The laboratory equipment listed in the attachments at the end of this document will need to be decontaminated before removal from the site. Most of the equipment will only need to be rinsed or wiped down before removal and disposal. The fume hoods and some of the other apparatus will require a larger decontamination effort due to the possible/probable corrosive surfaces that are present as they sit in the building.



ATTACHMENTS

- A. Table of Laboratory Waste Inventory**
- B. Table of Laboratory Equipment Inventory**
- C. Photographs**



Attachment A

Laboratory Waste Inventory

EnviroSmart Inc.

Bldg 13 Lab Waste Inventory

Inspection Date: 3/26/13

Small = < 1 gal

Bckt = 1 gal-15 gal

DM = >15 gal

CONT. #	Chemical Name/Description	Manufacturer	Physical State	Quantity	Size	Container Type	How Full is the container?	Room #	Notes
1	Floor Wax	Hillard Industrial	S (L) G	1	Small Bckt DM	Metal (Poly) Glass		122	
2	SAE 20 Oil for Press		S (L) G	1	Small Bckt DM	(Metal) Poly Glass		122	
3	Aquatechtor Dector Pad, Free water	DLA 120	(S) L G	96	(Small) Bckt DM	(Metal) Poly Glass		201A	
4	Hollow Cathode Lamps	Varian	(S) L G	60	Small Bckt DM	Metal Poly Glass		201,203	
5	Propane Canister		S L (G)	1	(Small) Bckt DM	Metal Poly Glass		201,203	
6	Unknown Clear liquid	in flask	S (L) G		(Small) Bckt DM	Metal Poly (Glass)		201,203	
7	LPG Fuel Refill	ERDCO	S L (G)		Small Bckt DM	(Metal) Poly Glass		206	
8	Evaporated Residue with lab glass		(S) (L) G		Small (Bckt) DM	Metal (Poly) (Glass)		206	
9	empty amber bottles		(S) L G	5-1 gal	(Small) Bckt DM	Metal Poly (Glass)	0%	301Z	
10	empty amber bottles		(S) L G	13 - 1 liter	(Small) Bckt DM	Metal Poly (Glass)	0%	301Z	
11	Water Displacement Lubricant	CSC 50	(S) L G	1	(Small) Bckt DM	(Metal) Poly Glass	1.5 aerosol	303	
12	Insecticide Pyrethrim	Bulk Chemical Dist. Inc.	(S) L G	1 - 12 oz can	(Small) Bckt DM	(Metal) Poly Glass	75% aerosol	303	
13	Great Day Enamel 204 Grey	Illinois Bronze Paint Co	(S) L G	1 - 13 oz can	(Small) Bckt DM	(Metal) Poly Glass	75% aerosol	303	
14	Otis Lubricants	Otis Elevator	(S) L G	1 - 1 gal	(Small) Bckt DM	(Metal) Poly Glass	Full	303	
15	Grey Paint	NA	(S) L G	1 - 1 gal	(Small) Bckt DM	(Metal) Poly Glass	Full	303	



Attachment B

Laboratory Equipment Inventory

EnviroSmart Inc.

Inspection Date: 3/26/13

Bldg 13 Lab Waste Inventory

Room #	Equipment Type/Description	Manufacturer	Serial #	Size/Type	Quantity	Contamination?
119	Vibration Isolation System	MicroGas G		4'x4'	1	No
107/106/104	Fume Hood	Fisher Scientific			1	Yes-not very rusty
107/106/104	Sinks			stainless steel/Chemical	3	No
107/106/104	Eyewash Station				1	No
107/106/104	Water Heater	GAR-RAY		24"x24"x20"	1	No
102	Pressure Vessel			Fills Room	1	very clean, possible hydraulic oil but sounds empty
Near 123,127	Electric Furnance	C.I. Hayes Inc	3710	Steel	1	No
Near 123,127	Testing Machine (crush test?)	Tinius Olsen				
Near 123,127	Magnetic Particle Inspecton Equipment	Magnaflux	GD-144/M2671366			No
128	Sink					No
201A	Automatic Flow	OS-04			1	No
201A	Aquatest 8	Photobolt			1	No
201A	Oil Quality Analyzer	Northern Instruments	1158		1	
201A	Fume Hood				1	
201A	Beckman Bath	LS1700			1	
201A	Electronic Balance	EB 25			1	
201A	CS 46 Carbon/Sulfur Determinator	Leco Corp			1	
201A	Pressure Gauge		Prop of USNAVY	4'x2'x2' steel box	1	
201A	10" Remote Recorder	Beckman	15082317		1	

Bldg 13 Lab Waste Inventory

Room #	Equipment Type/Description	Manufacturer	Serial #	Size/Type	Quantity	Contamination?
201A	Atomcomp	Jarrell-Ash	Model 750		2	
201A	Nitrogen/Oxygen Determinator	Leco Corp	Model TC 436		1	
201A	Electrode Furnace	Leco Corp	Model EF400		1	
201A	Duomet II Belt Surfacar				1	
201A	Misc. Valves/Gauges				1	
201A	Portable Trace Oxygen Analyzer	Teledyne	Model 311		1	
205	Autoprep Chromatograph	Varian	30		1	No
205	Flow Meter	Varian	BK010030		1	No
205	GC Columns - Fused Silica					
205	GC Column			Stainless Steel	1	
205	Autosampler	Varian	Model 8085		1	
205	Universal Sampling Pump	MSA		8"	1	
205	Misc glass syringes, beakers, tubs					No
205	Solvent Flame Locker			Metal		No
210	Centifuge	International Equipment Co	42828634		1	No
210	Field Monitors for Field Analysis	Millipore	MAWP037P0	3 boxes of 48(pond Filters)	1	No
210	Ferrograph Fluid Analyzer System	Foxboro			1	Possible
201, 203	Misc empty glass/plastic containers					
201, 203	Tubing					

Bldg 13 Lab Waste Inventory

Room #	Equipment Type/Description	Manufacturer	Serial #	Size/Type	Quantity	Contamination?
206	Unknown Clear liquid			250ml Glass	1	
206	LPG Fuel Refill	ERDCO		Metal	1	
206	Evaporated Residue with lab glass			Glass	1	
206	Oil Analyzer	Baird	CG285		1	
206	Lektriber 100	Sperry Remington			1	
206	Oscilloscope	Hewitt Packard	6276		1	
206	Ignition Transformer	Jefferson Electric	628-171		2	
206	PH Meter	Fischer Scientific	3059/1364		2	
206	Lab Controller	Curtin Matheson Scientific	1487		1	
206	Time-It Timer	Precision Scientific	69230		5	
206	Muffle Furnace	Blue M Elec. Co	5380		1	
206	Kjeldah Tester	Precision Scientific			1	
206	Sampler Charger	Mettler ST20	M763436		1	
206	Titration	Mettler DL21			1	
206	Oven	Precision Thelco	Model 27		1	
206	Flashpoint ERCO Rapid Tester				1	
206	Flashpoint Tester	Pensky-Martens			1	
206	Cleveland Open Cup Tester	GCA Precision Scientific			1	
206	Porta-Temp	Precision Scientific	15AU8		1	

Bldg 13 Lab Waste Inventory

Room #	Equipment Type/Description	Manufacturer	Serial #	Size/Type	Quantity	Contamination?
206	Temperature Adjuster	Fischer			1	
206	Melting Pot	Waage	WP8A		1	
206	Photobolt Aquatest 8	Photobolt	1898		1	
206	Muffle Furnace	GCA Precision Scientific	11AC11		1	
206	ASTM Colormeter	Fischer Scientific			1	
206	Glas-Col Shaker-in-the-round	Apparatus Company			1	
206	Oven	Modern Scientific Research & Process	10S8		1	
206	Seta Flash Tester	ERDCO			3	
206	Free Water Detector	Spectronics Corp	772181		1	
206	Flash Point Tester	Precision Scientific	11AM4		1	
206	Heater	GCA Precision Full-kon-trol			1	
201, 203	Sealer Jaws	Clamco Corp	253B		2	
201, 203	Illuminator	Fischer Scientific	1201		1	
201, 203	High Temp Electric Furnace	Burrel	1129		1	
201, 203	Muffle Furnace	Blue M	GFV879		2	
201, 203	Furnace/Lab Hood			Metal	3	Perchloric Acid
201, 203	Hot Plate	Thermolyne 2200			1	
201, 203	Corrosives Locker			Metal	1	
201, 203	Electrolite Analyzer	EH Sargeant & Co	Navy 134199927		1	

EnviroSmart Inc.

Inspection Date: 3/26/13

Bldg 13 Lab Waste Inventory

Room #	Equipment Type/Description	Manufacturer	Serial #	Size/Type	Quantity	Contamination?
201, 203	Sinks				3	Drains?
201, 203	Titration	Perkin Elmer	2830		1	
201, 203	Power Supply	Perkin Elmer	110445		1	
201, 203	Ignition Unit	Parr Instrument			2	
201, 203	Burner Control	Perkin Elmer			1	
201, 203	Hot Plate	VWR			1	
301Z	Beckman C-20	Black Box	ELT C3	6"x10"x4"	1	
301Z	Beckman C-6	Grey Box	25780	5"x12"x3"	1	
301Z	Box of round mirrors	Grey Box		3"x14x3"	1	
301Z	Chloride Swipe Kit	Grey Metal Box		8x8x4	1	
301Z	Meter Pump	Watts	101258110	12'x6"	1	
301Z	Fume Hood				2	
301Z	Muffle Furnace				1	
301Z	Sink				2	



Attachment C

Photographs



Fume Hood in Room 203



Fume Hood in Room 203



Lab Waste in Room 201(A)



Lab Waste in Room 201(A)



Lab Waste in Room 203



Lab Equipment in Room 203



Lab Equipment in Room 203



Lab Equipment in Room 301Z



Lab Equipment in Room 301Z



Lab Equipment in Room 301Z



Misc. Waste in Room 303



Lab Equipment in Room 105